Official Journal of the Malaysian Medical Association

The Medical Journal of Malaysia

National Cancer Congress Malaysia (NCCM) 2025

November 2026

Volume: 81

Supplement: 4

ISSN 0300-5283

MJM

Official Journal of the Malaysian Medical Association

Volume 81 Supplement 4 November 2026

EDITORIAL BOARD

International Advisory Board
Laureate Professor Dr Nicholas Talley
Assoc Prof Dr Mahesh Choolani

Advisor
Prof Datuk Dr Lekhraj Rampal

Editor in Chief
Dr Liew Boon Seng

Handling Editor
Prof Dr Irfan Mohamad

Editors
Prof Dr Andee Dzulkarnaen Zakaria
Prof Dato' Dr N.K.S Tharmaseelan
Assoc Prof Dr Navin Kumar Devaraj
Assoc Prof Dr Sanjiv Rampal
Assoc Prof Dr Hardip Singh Gendeh
Dr Dhashani Sivaratnam
Dr Hans Alexander Mahendran

Editorial Manager
Ms Mahaletchumy Alagappan

ISSN 2948-3859

The Medical Journal of Malaysia is published six times a year.
MJM is published bimonthly ie. January, March, May, July, September and November.

All articles which are published, including editorials, letters and book reviews represent the opinion of the authors and are not necessarily those of the Malaysian Medical Association unless otherwise expressed.

Copyright reserved © 2026
Malaysian Medical Association

Advertisement Rates:
Enquiries to be directed to the Secretariat.

Subscription Rates:
Price per copy is RM100.00 or RM360.00 per annum, for all subscribers.

Secretariat Address:
Malaysian Medical Association
4th Floor, MMA House, 124, Jalan Pahang, 53000 Kuala Lumpur.
Tel: (03) 4042 0617, 4041 8972, 4041 1375 Fax: (03) 4041 8187
E-mail: info@mma.org.my / mjm@mma.org.my
Website: www.mma.org.my

The Medical Journal of Malaysia

MJM

INSTRUCTION TO AUTHORS

The Medical Journal of Malaysia **(MJM)** welcomes articles of interest on all aspects of human medical field (excluding dentistry and veterinary science) in the form of original papers, systematic review articles, short communications, continuing medical education, commentaries and letter to editor. Articles are considered for publication on the condition that they are submitted exclusively to The Medical Journal of Malaysia and are not under consideration for publication elsewhere.

NOTE: MJM is published bimonthly, i.e., January, March, May, July, September and November.

REQUIREMENTS FOR ALL MANUSCRIPTS
Please ensure that your submission to the MJM conforms to the International Committee of Medical Journal Editors Recommendations (https://www.icmje.org/recommendations/) for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals.

Neither the Editorial Board nor the Malaysian Medical Association accept responsibility for the views and statements of authors expressed in their contributions. The Editorial Board further reserves the right to reject papers read before a society. To avoid delays in publication, authors are advised to adhere closely to the instructions given below.

MANUSCRIPTS
Manuscripts shall be submitted in English (British English). Manuscripts shall be submitted online through *MJM Editorial Manager*, http://www.editorialmanager.com/mjm

Registration and submission instructions are available on the website. Authors can monitor the progress of their manuscript via MJM Editorial Manager. For authors and reviewers encountering problems with the system, an online Users' Guide and FAQs are available via the "Help" option on the taskbar of the login screen.

FEE AND CHARGES
MJM charges a one-time, non-refundable Article Processing Charge (APC) upon Submission

MJM Member: RM500
Non Member: RM800
Overseas: USD200

MJM Case Report
Member: RM400
Non Member: RM500

Note:
The APC waiver applies only to editorial board members and authors whose articles are invited by the editor. In addition, recipients of the MJM Reviewer Recognition Award from the previous year may enjoy a waiver of the APC for the next calendar year (e.g., recipients of the MJM Reviewer Recognition Award 2026 will enjoy a waiver of APC for articles submitted between January and December 2027).

INITIAL SCREENING PROCESS
Submitted manuscripts undergo two preliminary evaluation stages before they are sent for peer review:

1. Editorial Assessment
The Editorial Assessment is conducted by the Editor-in-Chief or members of the Editorial Board to determine whether the manuscript is suitable for further consideration. During this stage, editors evaluate:
- The manuscript's relevance to the journal's scope and aims;
- Originality, scientific significance, and novelty of the work;
- Overall quality of the study design and methodology;
- Ethical compliance, including ethics approval and informed consent where applicable;
- Clarity of presentation and adherence to scholarly standards; and
- Potential contribution to the field.

Manuscripts that do not meet the journal's requirements or lack sufficient scientific merit may be rejected at this stage without external peer review.

2. Technical Check
The editorial office performs the Technical Check to ensure the submission complies with the journal's formatting and administrative requirements. This includes verification of:
- Compliance with the journal's author guidelines and manuscript formatting requirements;
- Completeness of submission files, including figures, tables, supplementary materials, and required forms;
- Accuracy of author information, affiliations, and correspondence details;
- Proper formatting of references and citations;
- Compliance with ethical declarations, conflict of interest statements, funding information, and data availability statements; and
- Similarity and plagiarism screening using appropriate detection software.

Manuscripts that fail the technical requirements may be returned to the authors for correction before proceeding to the next stage of evaluation. Only manuscripts that successfully pass both the Editorial Assessment and Technical Check will proceed to the external peer-review process.

PEER REVIEW PROCESS
All submissions must include at least two (2) names of individuals who are qualified to review the work as suggested reviewers. Suggested reviewers must not be involved in the work presented, nor affiliated with the same institution(s) as any of the authors or have any potential conflicts of interest in reviewing the manuscript. All manuscripts submitted will be reviewed by the Editor-in-Charge before they are sent for peer review. Manuscripts that are submitted to MJM undergo a double-blind peer review (i.e., the reviewers and authors are blinded to each other) and are managed online. The selection of reviewers is the prerogative of the Editors-in-Charge.

ELIGIBILITY AS AN AUTHOR
MJM follows the recommendation of the International Committee of Medical Journal Editors (ICMJE) for eligibility to be considered as an author for submitted papers. The ICMJE recommends that authorship be based on the following four (4) criteria:
1. Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND
2. Drafting the work or revising it critically for important intellectual content; AND
3. Final approval of the version to be published; AND
4. Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Generative artificial intelligence (Gen AI) does not qualify for authorship and should not assume primary authorial responsibilities, including developing scientific arguments or insights, conducting analyses, interpreting findings, or drawing conclusions.

TYPES OF PAPERS
Original Articles:
Original Articles are reports on findings from original research. We will give preference to high-quality original research that makes a significant contribution to medicine and public health. Original articles shall consist of a Structured Abstract that includes;
- Introduction
- Materials and Methods
- Results
- Conclusion

The word count for the structured abstract should not exceed 500 words.

The main text of the articles should not exceed 4000 words, up to five (5) tables/figures (including illustrations/images) and a maximum of 40 references. Manuscripts describing original research should conform to the IMRAD format, i.e. INTRODUCTION, MATERIALS AND METHODS, RESULTS, DISCUSSION AND CONCLUSION.

Original articles of cross-sectional and cohort design should follow the corresponding STROBE checklist; and clinical trials should follow the CONSORT checklist.

Systematic Review Articles:
MJM only accept systematic review articles with or without meta-analysis. MJM does not accept unsolicited narrative reviews, scoping reviews, mapping reviews or any other type of review article.

Systematic review articles shall include a structured abstract and the main text. The word count for the structured abstract should not exceed 500 words. The main text should not exceed 4,000 words and may include up to five (5) tables and/or figures. Authors may cite a maximum of 20 references other than the studies included in the systematic reviews. All studies included in the systematic review should be cited and listed in the reference list. Prepare systematic reviews in strict compliance with MOOSE or PRISMA guidelines.

Short Communications:
Short communications are short research articles of important preliminary observations, findings that extend previously published research, data that do not warrant publication as a full paper, small-scale clinical studies, and clinical audits. Short communications should not exceed 1,500 words and shall consist of a Summary and the Main Text. The summary should be limited to 100 words and provided immediately after the title page. The number of tables and/or figures, including illustrations/images, should be limited to three (3) and the number of references to ten (10).

Continuing Medical Education (CME) Articles:
A CME article is a critical analysis of a topic of current medical interest. The article should include the clinical question or issue and its importance for general medical practice, speciality practice, or public health. It shall consist of a Summary and the Main Text. The summary should be limited to 500 words and provided immediately after the title page. After acceptance, authors must provide five multiple-choice questions, each with five true/false responses, based on the article. For guidelines, please refer to: Sivalingam N, Rampal L. Writing Articles on Continuing Medical Education for Medical Journals. Med J Malaysia 2021;76(2):119-124.

Commentaries:
Commentaries will usually be invited articles that comment on articles published in the same issue of the MJM. However, we welcome unsolicited commentaries on issues relevant to medicine in Malaysia. They should not exceed 1,000 words. The format of the commentaries may be unstructured but should be concise. When presenting a point of view, support it with relevant references where necessary.

Letters to Editor:
Letters to Editor are responses to items published in MJM or to communicate a very important message that is time-sensitive and cannot wait for the full process of peer review. Letters that include statements of statistics, facts, research, or theories should include only up to three (3) references. Letters that are personal attacks on an author will not be considered for publication. Such correspondence must not exceed 1,000 words.

Editorials:
These are articles written by the editor or editorial team concerning the ***MJM*** or about issues relevant to the journal.

STRUCTURE OF PAPERS
Title Page:
The title page should state:
- Type of manuscript (i.e. original article, systematic review, short communications, CME etc.)
- The article title is in sentence case. No abbreviations are allowed for the title, with exceptions: Widely recognized terms like COVID-19 are sometimes accepted if universally understood, but avoiding acronyms entirely is preferred.
- Full name(s) of the author(s) (with the surname or last name bolded), degrees (limited to one degree or diploma), affiliation(s), and corresponding author's address. E.g. Ismail Shatriah, MMed (Ophthalmology), Navin Kumar Devaraj, MMed (Family Medicine). Undergraduate students who have not yet been awarded a degree or diploma are not required to provide a qualification.
- Authors' affiliations shall be provided after the authors' names. Indicate the affiliations with a superscript number at the end of the author's degrees and at the start of the name of the affiliation. If the author is affiliated to more than one (1) institution, a comma should be used to separate the number for the said affiliation. The maximum number of affiliations allowed is two.
- Please indicate the corresponding author and provide the affiliation, full postal address and email.
- Preferred abbreviated author names for indexing purposes, e.g. Rampal L (for Lekhraj Rampal), Liew BS (for Boon Seng Liew), Shatriah I (for Ismail Shatriah), VC Hoe (for Victor Chee-Wai Hoe).
- Place the word counts near the bottom of the title page
  o Abstract word count:
  o Main text word count:

Articles describing Original Research should consist of the following sections (IMRAD format): Abstract, Introduction, Materials and Methods, Results, Discussion, Acknowledgements and References. Each section should begin on a fresh page. Scientific names, foreign words and Greek symbols should be in italics.

Main Text:
Abstract and Key Words:
A structured abstract is required for Original and Systematic Review Articles. Limit it to 500 words and place it immediately after the title page. Below the abstract, provide and identify three (3) to five (5) keywords or short phrases that will assist indexers in cross-indexing your article. Use terms from the Medical Subject Headings (MeSH) list from Index Medicus for the keywords where possible. Keywords are not required for Short Communications, CME articles, Commentaries and Letter to Editor.

INTRODUCTION
Clearly state the purpose of the article. Summarise the rationale for the study or observation. Give only strictly pertinent references, and do not review the subject extensively. The introduction should be succinct and should not exceed 500 words.

MATERIALS AND METHODS
Describe your selection of the observational or experimental subjects (patients or experimental animals, including controls) clearly, identify the methods, apparatus (manufacturer's name and address in parentheses), and procedures in sufficient detail to allow other workers to reproduce the results. Give references to established methods, including statistical methods; provide references and brief descriptions of methods that have been published but are not well-known; describe new or substantially modified methods, give reasons for using them and evaluate their limitations.

Identify precisely all drugs and chemicals used, including generic name(s), dosage(s) and route(s) of administration. Do not use patients' names, initials or hospital numbers. Include numbers of observations and the statistical significance of the findings when appropriate.

When appropriate, particularly in the case of clinical trials, state clearly that the experimental design has received the approval of the relevant ethical committee. Ethical approval is usually stated in a separate subsection/paragraph called Ethics Approval, and it should be at the end of the Materials and Methods section.

RESULTS
Present your results in logical sequence in the text, tables and illustrations. Do not repeat in the text all the data in the tables or illustrations, or both: emphasise or summarise only important observations in the text. Do not present the methods in the results section.

DISCUSSION
Emphasise the new and important aspects of the study and the conclusions that follow. Do not repeat in detail data given in the Results section. Include in the Discussion the implications of the findings and their limitations and relate the observations to other relevant studies.

CONCLUSION
Link the conclusions with the goals of the study but avoid unqualified statements and conclusions not completely supported by your data. Avoid claiming priority and alluding to work that has not been completed. State new hypotheses when warranted, but clearly label them as such. Include recommendations when appropriate.

ACKNOWLEDGEMENTS
- Acknowledgements of general support, grants, technical assistance, etc., should be indicated.
- Authors are responsible for obtaining the consent of those being acknowledged.

REFERENCES AND CITATION STYLE
The *Medical Journal of Malaysia (MJM)* follows the **Vancouver numbered referencing style.** Authors are responsible for ensuring that all references are accurate and should verify each reference against the original source before submission. Authors should **not cite documents that they have not personally accessed and verified.**

1. In-text citations
- References should be cited using **superscript Arabic numbers,** assigned consecutively according to the first appearance in the text.
- Place citation numbers at the end of the relevant sentence or clause, after punctuation marks, with no space before the citation.
- When citing multiple references:
  o Use a **comma** between non-consecutive references.
  o Use a **hyphen** to indicate a consecutive range.

Example:
Several effective drugs are available at fairly low cost for treating patients with hypertension and reducing the risk of its sequelae.[1,3-5]
- When an author's name is mentioned in the text, the corresponding citation number must still be included.
- For works with multiple authors cited narratively in the text, use the **first author's surname followed by "et al."**

Example:
Jewell et al.,[8] highlighted the importance of characterising differences between emerging SARS-CoV-2 variants.

2. Reference list
All references cited in the manuscript must be included at the end of the article under the heading **REFERENCES.**
- References should be numbered consecutively according to their first citation in the text.
- Every reference listed must be cited in the manuscript, and every citation must have a corresponding entry in the reference list.
- Authors are responsible for the **accuracy and completeness of all references** and should verify them against the original sources before submission.
- Authors should not include references to documents they have not accessed and verified.

3. Author listing
- List all authors when there are **six or fewer.**
- When there are **more than six authors,** list the **first six authors followed by "et al."**

4. Titles
- Use **sentence case** for article and book titles.
- Capitalise only the first word, proper nouns, acronyms and other terms that conventionally require capitalisation.

5. Journal names
- Journal names should be abbreviated according to the **MEDLINE/Index Medicus journal abbreviation.**
- Do **not** italicise journal names.
- Do **not** add a full stop after the abbreviated journal name.

6. Page numbers
- Use the **minimal form** for page ranges by omitting repeated digits where appropriate.

Example:
134–8 rather than 134–138.

7. Year, volume, issue and pages
For journal articles, present the publication details in the following order:
Year; volume(issue): pages.
- Do not include the month or day of publication.
- Use a space after the semicolon separating the year and volume.
- Use a space after the colon separating the volume/issue and page numbers.

Example:
2019; 11(6): 297–301.

8. DOI and URL
- Do **not** include DOI or URL information for peer-reviewed journal articles.
- URLs should be included only where required for **websites, webpages or other online resources** that do not have conventional publication details.

9. Websites and webpages
For websites and webpages:
- Provide sufficient information to identify the webpage or document.
- Include the **URL.**
- Include the **date accessed.**

Authors should ensure that URLs are current and accessible at the time of manuscript submission.

Example reference journals:
Standard Journal Article
Rampal L and Liew BS. Coronavirus disease (COVID-19) pandemic. Med J Malaysia 2020;75(2): 95-7.

Rampal L, Liew BS, Choolani M, Ganasegeran K, Pramanick A, Vallibhakara SA, et al. Battling COVID-19 pandemic waves in six South-East Asian countries: A real-time consensus review. Med J Malaysia 2020; 75(6): 613-25.

NCD Risk Factor Collaboration (NCD-RisC). Worldwide trends in hypertension prevalence and progress in treatment and control from 1990 to 2019: a pooled analysis of 1201 population-representative studies with 104 million participants. Lancet 2021; 11; 398(10304): 957-80.

Books and Other Monographs:
Personal Author(s)
Goodman NW, Edwards MB. 2014. Medical Writing: A Prescription for Clarity. 4th Edition. Cambridge University Press.

Chapter in Book
McFarland D, Holland JC. Distress, adjustments, and anxiety disorders. In: Watson M, Kissane D, Editors. Management of clinical depression and anxiety. Oxford University Press; 2017: 1-22.

Corporate Author
World Health Organization, Geneva. 2019. WHO Study Group on Tobacco Product Regulation. Report on the scientific basis of tobacco product regulation: seventh report of a WHO study group. WHO Technical Report Series, No. 1015.

NCD Risk Factor Collaboration (NCD-RisC). Rising rural body-mass index is the main driver of the global obesity epidemic in adults. Nature 2019; 569: 260–64.

World Health Organization. Novel Coronavirus (2019-nCoV) Situation Report 85, April 14, 2020. [cited April 2020] Accessed from: https://www.who.int/docs/defaultsource/coronaviruse/situationreports/20200414-sitrep-85-covid-19.

Online articles
Webpage: Webpages are referenced with their URL and access date, and as much other information as is available. The cited date is important as webpages can be updated and URLs change. The "cited" should contain the month and year accessed.
Ministry of Health Malaysia. Press Release: Status of preparedness and response by the ministry of health in and event of outbreak of Ebola in Malaysia 2014 [cited Dec 2014]. Available from: http://www.moh.gov.my/english.php/database_stores/store_view_page/21/437.

Other Articles:
Newspaper Article
Panirchellvum V. No outdoor activities if weather too hot. the Sun. 2016; March 18: 9(col. 1-3).

Magazine Article
Rampal L. World No Tobacco Day 2021 -Tobacco Control in Malaysia. Berita MMA. 2021; May: 21-22.

Tables and Figures:
All tables and figures should have a concise and informative title, and should not occupy more than one printed page. They should be relevant to the manuscript and should complement, rather than duplicate, information presented in the text.
1. Titles and Numbering
- Each table and figure should have a concise title that clearly describes its content.
- Tables and figures should be self-explanatory and understandable without reference to the main text.
- Tables should be numbered consecutively with **Roman numerals** according to their first citation in the text, followed by single colon (e.g., Table I:, Table II:, Table III:, etc).
- The title for table would not be italicised, written in sentence case and do not place a period at the end.
- Figures should be written in an abbreviated format and numbered consecutively using Arabic numerals, followed by single colon (e.g., Fig. 1:, Fig. 2:, Fig. 3:), but written in non-abbreviated format when stating in the text. (e.g., Figure 1, Figure 2, Figure 3).
- The title for figure would not be italicised, in sentence case and do not place a period at the end.
- All tables and figures must be cited in the text in consecutive order.
- All abbreviations, acronyms, and symbols used within a table or a figure must be defined in full in the footnote.

2. Placement
- Tables and figures should be placed after the relevant sections of the manuscript in which they are first described.
- Each table and figure should be presented on a separate page.
- Tables and figures should also be submitted as supplementary files through the journal management platform.

3. Tables
- Tables should be prepared in an editable format and submitted as Microsoft Word documents.
- Vertical lines should not be used in tables.
- Explanatory information should be provided in footnotes rather than in the table title or body where appropriate.
- Table footnotes should be indicated using superscript lower-case symbols and placed immediately below the table.
- All abbreviations and symbols used in a table should be explained in the footnotes unless they are standard and widely understood.

4. Figures, images and flow charts
- Figures should be of sufficient quality for publication.
- Images and photographs should be submitted as separate **JPEG files with a minimum resolution of 300 dpi.**
- Clinical photographs must be appropriately anonymised so that the identity of the subject cannot be determined.

5. Photographs of Patients
- Proof of permission and/or consent from the patient or legal guardian must be submitted with the manuscript.
- A statement on this must be included as a footnote for the relevant photograph.

6. Subheadings
- Use sentence case.
- Do not use a subheading in the "CONCLUSION" section.

7. Appendices and supplementary files
- The MJM does not accept appendices or extra supplementary materials (such as external datasets, data collection proforma or questionnaires, extended protocols, or web-only text files) attached to a standard individual paper submission.
- The authors may need to condense the information into the main text or format it into the maximum 5 tables allowed.
- The authors may use external repository deposition with an assigned Digital Object Identifier (DOI). The authors may cite in the main text or use the "Data availability statement" or "Data sharing statement" section.
- Place this section right after the Acknowledgments section and before references.

8. File naming
- When tables, figures, or images are submitted as separate files, the filename should include the surname of the first author and match exactly the table or figure number used in the manuscript.
- Examples:

SMITH Table II
SMITH Figure 1

Colour reproduction:
- Illustrations and diagrams are normally reproduced in **black and white** in the printed version of the journal.
- Authors may request **colour reproductions** where colour is necessary for the appropriate presentation or interpretation of the materials.
- Colour reproduction in the printed journal will incur an additional charge, which will be borne by the authors.
- Any applicable charges will be determined by the journal on a per-article basis and communicated to the authors before publication.

Abbreviations:
- Use only standard abbreviations.
- The full-term for which an abbreviation stands should precede its first use in the abstract, article text, tables, and figures, unless it is a standard unit of measurement.
- Abbreviations shall not be used in the Title.
- Abbreviations should be kept to a minimum.

Formatting of text:
- Numbers one to ten in the text are written out in words unless they are used as a unit of measurement, except in figures and tables.
- Use single hard-returns to separate paragraphs.
- Do not use tabs or indents to start a paragraph.
- Do not use the automated formatting of your software, such as hyphenation, footnotes, endnotes, headers, or footers (especially for references).
- Submit the Manuscript in plain text only, removing all 'field codes' before submission.
- Do not include line numbers.
- Include only page numbers.
- For "p-value", "*p*" should be consistently italicized throughout the text.
- In the table with the p-value, write in actual or exact value (not $p < 0.05$) unless if p-value is less than 0.001, write as $p < 0.001$ in the table. In the interpretation of the result, only use $p > 0.05$, $p < 0.05$ or $p < 0.01$ and not $p < 0.001$ or $p < 0.0001$.

Revision of Manuscript:
Following peer review, authors may be required to revise their manuscript to address comments and recommendations provided by the reviewers and editors. The revision process aims to improve the quality, clarity, accuracy, and scientific rigour of the manuscript.

Authors are expected to:
- Address all reviewer and editor comments carefully and comprehensively.
- Highlight all changes made in the revised manuscript using track changes or coloured text, as specified by the journal.
- Submit a detailed point-by-point response letter explaining how each comment has been addressed. Where a suggestion has not been incorporated, a clear justification should be provided.
- Ensure that all revisions maintain consistency throughout the manuscript, including the abstract, results, tables, figures, and references where applicable.

Revised manuscripts will be assessed by the editorial team and, when necessary, may be returned to the original reviewers for further evaluation. Authors should submit the revised manuscript within the timeframe specified by the MJM. Failure to provide satisfactory revisions or to respond adequately to reviewer comments may result in rejection of the manuscript.

Only manuscripts that satisfactorily address the reviewers' and editors' comments will be considered for final acceptance and publication.

Best Paper Award:
All original papers which are accepted for publication by the MJM, will be considered for the 'Best Paper Award' for the year of publication. No award will be made for any particular year if none of the submitted papers is judged to be of suitable quality.

Use of Artificial Intelligence (AI) in Publication:
The MJM acknowledges that authors may use Artificial Intelligence (AI) tools to assist in the preparation of manuscripts. However, the use of AI must be transparent, ethical, and compliant with accepted standards of scientific publishing.

Policy on AI Use
- AI tools may be used to assist with language editing, grammar correction, formatting, and improving readability.
- Authors remain fully responsible for the accuracy, integrity, originality, and validity of all content in the manuscript, including any content generated or modified by AI tools.
- AI tools must not be listed as authors or co-authors, as they cannot assume responsibility for the work, approve the final manuscript, or fulfil authorship criteria.
- Authors should disclose the use of AI tools in an appropriate section of the manuscript (e.g., Materials and Methods, or Declaration section), specifying the name of the tool and the purpose for which it was used.
- AI-generated text, images, data, or analyses must be carefully reviewed and verified by the authors to ensure accuracy and avoid potential biases, errors, or fabricated information.
- The use of AI to generate, manipulate, or fabricate research data, results, references, or images is strictly prohibited and may constitute scientific misconduct.
- The MJM reserves the right to request additional information regarding the use of AI tools during manuscript preparation and may reject submissions that fail to comply with these guidelines.

Example Disclosure statement
- The authors used Grammarly V1.2.293.1952 to assist with language editing and grammar, and ChatGPT (OpenAI) version GPT 5.6 Sol to improve the readability of the manuscript. All content was reviewed, revised, and verified by all authors. All authors take full responsibility for the final version of the manuscript.

National Cancer Congress Malaysia (NCCM) 2025

Scientific Committee for NCCM 2025
Prof Dr Felicia Chung Fei Lei (Scientific co-chairperson)
Dr Lau Tze Pheng (Scientific co-chairperson)
Prof Ts Dr Goh Bey Hing
A/Prof Dr Caryn Chan Mei Hsien
Dr Hadi Mohamad Abu Rasheed
Prof Dato Dr Fitjerald Henry
Dr Eliana Ahmad
Prof Dr Anand Sachithanandan
Dr Suhana Yusak
Dr Nur Fadhlina Abdul Satar
Dr Tan Chih Kiang
Dr Vijayan Munusamy
Dr Malwinder Singh Sandhu
Dr Teh Kok Hoi
Prof Dr Chin Kin Fah
Dr Ros Suzanna Ahmad Bustamam
Dr Kavinash Loganathan
Dr Jason Chin Yu Aun
Prof Dr Nirmala Bhoo-Pathy
A/Prof Dr Lim Ren Jye
A/Prof Dr Tan Lu Ping
Prof Dr Rakesh Naidu
Prof Dr Ho Gwo Fuang
A/Prof Dr Ho Weang Kee
A/Prof Dr Retnagowri Rajandram

CONTENTS Page

PLENARY LECTURES

P001	Beyond medical treatment - addressing the psychosocial needs of cancer patients and their family caregivers *Beverly Lim Høeg*	1
P002	Defend your health with every bite: Nutrition and cancer prevention *Ho Chiou Yi*	2
P003	Cancer and culture: Beliefs and barriers that inhibit early detection and treatment of breast cancer among indigenous womenfolk in rural Sarawak *Melissa Siaw Han Lim, Fitri Suraya Mohamad, Keng Sheng Chew, Nafeesa Mat Ali, Yolanda Augustin*	3
P004	Metabolic disorders, metabolites, and risk of lung cancer: Evidence from population-based prospective cohort studies" *Mengmeng Li*	4
P005	Nasopharyngeal carcinoma in Malaysia: A path toward better outcomes *Yap Lee Fah*	5
P006	Lessons from biomarker-driven oncology trials: Case studies of bench-to-bedside translation *Kong Li Ren*	6
P007	Updates on diagnosis and prognosis of renal cell carcinoma *Retnagowri Rajandram, Ning Yi Yap, Glenda Carolyn Gobe*	7
P008	Cancer and immunotherapy *Voon Pei Jye*	8
P009	The overlapping burden: Prevalence of comorbidities in cancer survivorship *Hoo Yee-Yin, Nirmala Bhoopathy*	9
P010	Integrating onco-fertility into survivorship care plans *Mohd Faizal Ahmad*	10
P011	Bridging conventional and traditional medicine in survivorship care: Towards integrated healing in Malaysia *Lim Ren Jye, Chan Si Yan*	11
P012	Colorectal cancer in South East Asia – Trends, challenges and treatment *Babu Sukumaran*	12
P013	Breast cancer in asian women: Why how you live & where you live matter *Ang Boon Hong, Shivaani Mariapun, Farahida Mohd Farid, Imelda Suhanti Ishak, Muhammad Faiz Md Taib, Asfarina Ab Rahim, Lenjai Anak Jembai, Tania Islam, Kartini Rahmat*	13
P014	Balancing the needs of colorectal cancer survivors *Kenneth Voon*	14
P015	Transforming care: Development and application of the needs assessment tool for colorectal cancer survivors (NeAT-CC)" *Nur Nadiatul Asyikin Bujang, Nirmala Bhoopathy*	15

CONTENTS Page

P016	From fork to fight: Exploring dietary patterns in colorectal cancer prevention *Mohd Razif Sharil*	16
P017	The epigenetic edge: Biomarkers for cancer monitoring and risk stratification *Felicia Chung*	17
P018	The next step in cancer screening and diagnosis *Eliana Ahmad*	18
P019	Building hope and empowering lives through the lens of palliative care *Saiful Abdul Latif*	19
P020	Screen, eat, live: Winning against colorectal cancer *Luqman Mazlan*	20
P021	Meaningful engagement of people living with cancer in their care *Hadi Abu Rasheed*	21
P022	Cancer and work capabilities *Gogillan Sevaratnam*	22
P023	What can mammograms tell us about breast cancer risk in asians *Shivaani Mariapun, Weang Kee Ho, Mikael Eriksson, Nur Aishah Mohd Taib, Cheng Har Yip, Kartini Rahmat, Celine M Vachon, Nadia Rajaram, Jingmei Li, Per Hall, Sara Lindstrom, Douglas F Easton, Soo Hwang Teo*	23
P024	Addressing disparities in cancer care: The role of multidisciplinary teams in Malaysia *Arnil Sirimanne*	24
P025	Cancers in children and adolescents: Progress and challenges *Teh Kok Hoi*	25

ORAL RAPID-FIRE PRESENTATIONS

OP001	Investigating the mechanisms of action of anticancer drugs using novel proteomic techniques *Yasser Tabana, Lina Alhourani, Richard Fahiman, Khaled Barakat*	26
OP002	Associations of cardiometabolic multimorbidity with risks of lung cancer and competing mortality: A population-based prospective cohort study *Jiahao Lin1, Yu Chen, Lan Wu, Wenkai Huang, Mengmeng Li*	27
OP003	Sacred health: Aligning cancer prevention with islamic teachings in Malaysia's multicultural context *Zhenyu Zou*	28
OP004	Radioactive iodine treatment with adjunctive use of thyrotropin alfa in advanced differentiated thyroid carcinoma: Local experience *Ahmad Zaid Zainal*	29
OP005	When love demands more: Cultural pressures behind aggressive end-of-life chemotherapy in Malaysia *Sri Kisha Subramaniam*	30

CONTENTS Page

OP006	Challenges and mHealth app support needs of patients with haematological cancers in self-managing oral systemic anticancer therapy: A qualitative study exploring stakeholders' perspectives *Lena Mahalingam, Tan Bee Kim, Ping Chong Bee, Chee Hooi Teoh, Renukha Sellappans, Lei Wee Hum, Diana Leh Ching Ng, Azlan Hussin, Sen Mui Tan, Li-Chia Chen*	31
OP007	Demographic profile of risk assessment module users in the BruHealth app for colorectal cancer screening in Brunei Darussalam *Nur Maajidah Haji Abdul Rahman*	32
OP008	The role of digital health in enhancing the reast cancer screening programme in Brunei Darussalam *Norazwani Ishak*	33
OP009	A case report on pericardial effusion secondary to medullary thyroid carcinoma: An uncommon occurrence *Nithya Devi Kandasami*	34
OP010	Clinical insights and management strategies in medullary thyroid carcinoma in East Malaysia, Sabah: A case series *Nithya Devi Kandasami*	35
OP011	Curative surgical and adjuvant management of metastatic follicular thyroid carcinoma: Reflections on multidisciplinary decision-making in complex disease *Muhammad Safwan Abdullah, Shahrun Niza Abdullah Suhaimi, Adi Syazni Muhammad, Abdul Fattah Abdul Hamid1*	36
OP012	Glutamine supplementation in tongue cancer: Alleviating treatment-related side effects through nutritional support – A case study *Chong Jia Jun*	37
OP013	Evaluating the clinical impact of omitting routine intraoperative frozen section during sentinel lymph node biopsy in early breast cancer *Gillian Caunter, Abdul Fattah Abdul Hamid, Adi Syazni Muhammed, Shahrun Niza Abdullah Suhaimi*	38
OP014	Cytotoxicity and mechanistic divergence of tocotrienol-rich fraction in TMZ-resistant GBM cells *Dionne Leong, Ammu Radhakrishnan, Saatheeyavaane Bhuvanendra, Wai Leng Lee*	39
OP015	Challenges in managing life-threatening obstructed thyroid cancer: 7-year HPRZ II experience *Abdul Hadi Anuar, Imi Sairi Abdul Hadi*	40
OP016	Role of elastin nanogel-encapsulated decursin/enzalutamide for castration-resistance prostate cancer therapy (CRPC) *Vinoth Kumar Lakshmanan*	41
OP017	A rare case of a locally advanced chest wall squamous cell carcinoma with papillary thyroid carcinoma *Husna Harun, Raflis Ruzairee Awang, Nor Azham Hakim Darail, Nur Aziah Adib Anuar*	42
OP018	Assessing functional ageing: Physical fitness profiles of breast cancer survivors versus cancer-free control women *Nur Afifah Mursyida1*	43

CONTENTS Page

OP019 Cross-modal explainable AI for melanoma diagnosis 44
Junwen Zheng, Xinran Xu, Xiuyi Fan, Chang Cai

OP020 A supraclavicular flap: A second chance for recurrent thyroid carcinoma 45
Husna Harun, Raflis Ruzairee Awang, Nor Azham Hakim Darail, Nur Aziah Adib Anuar

OP021 Paediatric graves' disease complicated by papillary thyroid carcinoma: A Malaysian experience 46
Arvind Navaneethkumar Viswanathan, Raflis Ruzairee Awang

OP022 A case report of remarkable clinical response to pembrolizumab as first line therapy in metastatic merkel cell carcinoma in Malaysia 47
Mariam Zafirah Mustazah, Gwo Fuang Ho

OP023 Phyllodes tumour of the breast: Clinicopathologic analysis and its implication on tumour recurrence 48
Surita Said, Siti Zubaidah Sharif, Chang Haur Lee, Nik Amin Sahid Nik Lah

OP024 Microfluidic fabrication of liquid crystalline nanocarriers for enhanced delivery of dasatinib in cancer treatment 49
Fiona Lye Sze Nee, Thiagarajan Madheswaran, Noor Idayu Zahid, Intan Diana Mat Azmi, Choy Sin Lee

OP025 Anti-cancer mechanisms of curcumin in temozolomide-resistant glioblastoma cells 50
Wong Shu Chyi, Rakesh Naidu, Muhamad Noor Alfarizal Kamarudin

OP026 Proteomic analysis of a diarylpentanoid, MS13 (1,5-bis(4-Hydroxy-3-Methyoxyphenyl)-1,4-Pentadiene-3-One), in lung adenocarcinoma cells 51
Ssareshma Sudesh Dev, Syafiq Asnawi Zainal Abidin, Iekhsan Othman, Faridah Abas, Rakesh Naidu

OP027 Curcumin analogue diarylpentanoid, 1,5-bis(4-hydroxy-3-methoxyphenyl)-1, 4-pentadiene- 3-one (MS13) inhibited proliferation and induced apoptosis on human primary gastric cancer ags cells 52
Faizatul Isyraqiah, Pang Kok Lun, Faridah Abas, Rakesh Naidu

OP028 Elucidating IFI6 and RSAD2 protein expression in oral squamous cell carcinoma using immunohistochemistry and aptahistochemistry with novel in silico DNA-aptamers 53
Danial Qasim Butt, Nur Asyilla Binti Che Jalil, Masitah Hayati Harun, Shazana Hilda Shamsuddin, Saidi Jaafar, Basaruddin Ahmad

OP029 Expanding access to cancer care: Integration of the ECHO model in Southeast Asia 54
Rosmawati Mohamed, Tarun Kumar, Clayton Richards, Elyse Barnes, Kumud Rai, Sunil Anand, Sanjeev Arora

OP030 Financial assistance for low-income cancer patients: A five-year utilisation review of a public–private partnership initiative in Malaysia 55
Nurul Asyiqin Aziz, Maizura Abdul Jabar, Anis Farhana Badrul Hisham

OP031 Selective pro-apoptotic and anti-proliferative effects of nisin ZP against MG-63 osteosarcoma cells 56
Muhammad Fairuz Azmi, Alyaa Al-Khateeb, Gabriele Froemming, Effat Omar, Sharaniza Ab Rahim

OP032 The cost-effectiveness of genetic testing strategies to diagnose lynch syndrome in incident colorectal cancer patients in Singapore 57
Sara Tasnim, Joanne Ngeow, Huijun Zhou, Ken Redekop

CONTENTS Page

OP033	Predicting factors for pathological complete response after neoadjuvant chemotherapy in breast carcinoma -a single centre experience" *Wei Keong Loo, Nur Bazlaah Bahari, Nadiah Basir, Dhiauddin Hai Ismail, Juliana Abdul Latiff*	58
OP034	The prevalence and predictors of coexisting thyroid malignancy in toxic multinodular goiter – a 17-year retrospective study by an East Coast Malaysian centre for endocrine surgery *Husna Harun, Junaidi Awang Isa, Wan Suriza Wan Abdul Rahman, Siti Salwa Mohamad Shokri, Imi Sairi Ab Hadi*	59
OP035	Association of GnRH receptor type-II overexpression and poor clinical profiles in ovarian cancer: Possibility of novel targeted treatment *Muhammad Ary Zucha, Agil Wicaksono, Nungki Anggorowati, Ardhanu Kusumanto, Andi Kurniadi*	60
OP036	Awareness, perception, and practice toward T&CM regulation and factors influencing use of registered T&CM practitioners among breast cancer patients at UMMC *Suniza Jamaris, Suang Meng Yeoh, Fariza Mohd Hairi*	61
OP037	Prevalence of p53 mutation in low-risk endometrial cancer *Muhammad Ary Zucha, Faizah Dwi Tirtasari, Ardhanu Kusumanto, Andi Kurniadi*	62
OP038	Early cancer detection training for primary care providers in Malaysia: Experience from the REBUNG cancer care in primary care short course" *Suniza Jamaris, Christine Shamala Selvaraj, Yong Kek Pang, Chong Guan Ng, Hamizah Sa'at, Nur Aishah Mohd Taib*	63
OP039	Ocular surface squamous neoplasia: A retrospective review from tertiary eye care centres in Malaysia *Che Mahiran Che Daud, Nor Sharina Yusof, Shamala Retnasabapathy, Rohanah Alias, Rosilah Mohamed*	64
OP040	Anticancer activity of Hopea odorata Roxb. stem bark aqueous, ethanolic extracts to Caco-2 colon adenocarcinoma cell line *Jitwadee Inthagard, Gornganok Piboonpol, Putthaporn Keawmeesri, Ruhainee Tohkayomatee*	65
OP041	Physical activity and their relationships with quality of life and cancer-related fatigue in breast cancer survivors in Malaysia *Aiman Nadia Akmar Rahman, Ooi Foong Kiew, Maria Justine, Mohd Nidzam Jawis*	66
OP042	Guideline adherence in the prophylaxis of acute chemotherapy-induced nausea and vomiting among paediatric patients *Yong Zheng Seah, Noraida Mohamed Shah, C-Khai Loh, Muhammad Faris Suliman*	67
OP043	LINC00266-1 is associated with tocotrienol-rich fraction cytotoxicity in triple-negative breast cancer cells *Jacelyn Lee, Ammu Radhakrishnan, Uma Devi Palanisamy, Kasthuri bai Magalingam, Reyhaneh Farghadani*	68
OP044	PD-1/PD-L1 modulation by nivolumab and gamma-ray irradiation in a radioresistant EMT6 mouse mammary carcinoma model *Mohammad Johari Ibrahim, Nur Fatihah Ronny Sham, Narimah Abdul Hamid Hasani, Harissa Husainy Hasbullah, Wan Nor I'Zzah Wan Mohammad Zain, Suraya Othman, Nora Julianna Osman, Muhammad Khalis Abdul Karim, Syed Baharom Syed Ahmad Fuad, Nurhaslina Hasan*	69

CONTENTS Page

OP045	From hospital to home: Developing and evaluating PiccoCare, a mobile applet for PICCs Self-Care among cancer patients in China *Xiaotian Huang, Norhasmah Mohd Zain, Azlina Yusuf*	70
OP046	Plasma lipid profiling and identification of diagnostic lipid biomarkers for glioma patients *Khairunnisa Abdul Rashid, Wong Jennie Hsiu Ding, Norlisah Mohd Ramli, Kamariah Ibrahim*	71
OP047	Downstaging of advanced lung cancer: A case report on integrative targeted therapy, lifestyle modification, and psychosocial factors *Nelbon Giloi, Aldrin Jasper Placidus, Rachel Majuyah, Tin Tin Thein, Mei Ching Lim, Jac Fang Lim*	72
OP048	AI and viral oncology: Global trends and scientific landscape through a bibliometric lens *Chye Phing Teh, Tiong Yew Tang, Jack Bee Chook*	73
OP049	The barriers to colorectal cancer screening tests among adults attending Seremban health clinic in Negeri Sembilan, Malaysia *Pui Shi Chong, Htwe Htwe Sein, Melissa Ching Yee Lee, Sue May Tay, Naliena Reddy Kumaresan, Sonakshi Fernado, Zainal Fitri Zakaria, Sherreen Elhariri*	74
OP050	Assessment of the association of infertility treatment with breast cancer risk in a tertiary referral hospital *Norlia Abdullah, Abdul Kadir Abdul Karim, Mohd Rizal Abdul Manaf, Farhana Raduan, Noor Lydia Nabila Kamlon, Nurfarazela Salamon, Rossnita Noor Marzuki*	75
OP051	Neoadjuvant tyrosine kinase inhibitor (Lenvatinib) for locally advanced papillary thyroid carcinoma: Early experience from a university hospital in Malaysia *Muhammad Safwan Abdullah, Mohd Helmi Mohd Samathani, Shahrun Niza Abdullah Suhaimi*	76
OP052	Tumour infiltrating lymphocytes (TILs) and its association with breast carcinoma imaging characteristics at Sultan Ahmad Shah Medical Centre (SASMEC @IIUM) *Raihanah Haroon, Noor Khairiah Kamaludin, Khairunisa Ahmad Affandi, Mohd Radhwan Abidin, Karimah Hanim Abd Aziz, Siti Nor Suzeana Mustfar, Siti Kamariah Che Mohamed*	77
OP053	Association of mammographic and sonographic findings with molecular subtypes among breast cancer patients in Sultan Ahmad Shah Medical Centre (SASMEC @IIUM), East Coast Malaysia *Raihanah Haroon, Fakhriah Aiman Md Baharuddin, Nor Ain Rabaiee, Karimah Hanim Abd Aziz, Siti Kamariah Che Mohamed, Siti Nor Suzeana Mustfar*	78
OP054	Knowledge and health belief in cervical cancer screening among women aged 30-60 years in the responsible area of health promoting hospital, Mai Khao (Khoean) Sub-District, Thalang District, Phuket Province, Thailand *Uraiwan Krai Muranishi, Kewalin Monglay, Tasneem Mhusor*	79
OP055	Respiratory and functional resilience following prehabilitation in a colorectal cancer patient with post-operative microleak: A case study *Mazatulfazura Salim, Muhammad Syamil Shah Jehan1, Hizami Amin-Tai*	80
OP056	Differential gene expression study on colorectal cancer *Vijayan Manickam Achari, Hemajaasri Ramesh, Mogana Darshini Ganggayah*	81
OP057	Spontaneous umbilical colocutaneous fistula as initial presentation of sigmoid adenocarcinoma: A rare surgical challenge in advanced colorectal cancer *Anwar Ramli, Azmi Md Noor, Faisal Elagili, Nurshamizam Baharudin, M Yusof Sainal*	82

CONTENTS Page

OP058	Illuminating breast cancer survivorship with explainable AI: Insights from Malaysian breast cancer survivorship cohort *Mogana Darshini Ganggayah, Sarinder Kaur Dhillon, Tania Islam*	83
OP059	Transforming pathology with GPT-4: Automated histopathological image analysis for enhanced disease diagnosis *Rajasegaran Sivaanandan, Sarinder Kaur Dhillon, Mogana Darshini Ganggayah, Weng Kuang Peng*	84
OP060	Development and characterization of cisplatin and probiotic loaded suppositories for the management of cervical cancer *Amandeep Singh*	85
OP061	The system starts here: Co-designing CRC screening from gaps to action in Selangor *Diane Woei-Quan Chong, Fathullah Iqbal Ab Rahim, Vivek Jason Jayaraj, Muhammad Fikri Azmi, Eliana Ahmad, Wilfred Kok Hoe Mok, Ahmad Shanwani Mohamed Sidek, Norfarizan Azmi, Rosaida Md Said, Rima Marhayu Abdul Rashid, Mohd Yasin Raja Abdullah, Muhammad Firdaus Md Salleh, Hamiza Shahar, Sondi Sararaks*	86
OP062	Patient perspective on cancer treatment experience at selected healthcare facilities *Mohammad Zabri Johari, Teresa Sui Mien Yong, Komathi Perialatan, Masitah Ahmad, Nor Haryati Ahmad Sanusi, Manimaran Krishnan*	87
OP063	Therapeutic potential of fucoxanthin in triple-negative breast cancer via Wnt/β-Catenin *Roshvin Pillai, Vinibha Illankovan, Manoj Kumar Karuppan Peruma, Dhivya Gandhi, Chinnaperumal Kamaraj, Vertriselvan Subramaniyan*	88
OP064	Actors associated with financial coping mechanisms among cancer patients in klang valley *Yang Rashidi Abdullah, Mas Ayu Said, Sharifa Ezat Wan Puteh*	89
OP065	Cross-sectional study about knowledge on warning signs and risk factors of two common cancer [colorectal and breast] among population of Maran, Pahang *Zuriyati Ramli*	90
OP066	Harnessing stakeholder engagement through social and behavior change theory to promote community uptake of HPV vaccination: A qualitative study in Malaysia *Mohd Fadzrel Abu Bakar, Saunthari Somasundaram, Murallitharan Munisamy, Muhammad Adib Redzuan, Muhammad Izuddin Mohd Zali*	91
OP067	Bridging the gap: Mammogram uptake patterns and the critical role of subsidies in expanding access among underserved women in Malaysia *Ashley Zulkapeli, Khoo Guat Suan*	92
OP068	Evaluating mobile imaging telemedicine for oral cancer screening: Economic insights from Malaysia *Sivaraj Raman, Asrul Akmal Shafie, Mannil Thomas Abraham, Shim Chen Kiong, Thaddius Herman Maling, Senthilmani Rajendran, Sok Ching Cheong*	93
OP069	A case report study of late effect of radiotherapy in a nasopharyngeal carcinoma patient after 16 years of CRT *Wang Hooi Xian, Boon Seang Tan, Chee Peng Hor*	94
OP070	Behind the clot: Atypical cerebral infarct as the manifestation of nasopharyngeal carcinoma—A case report of two rare presentations” *Teo Sin Yee, Chuin-Hen Liew*	95

CONTENTS Page

OP071 Community enforcement in action: A comparative study of JomLapor smoking violation reports in Penang and Terengganu (Jan–May 2025) 96
Mohd Ishak Abir, Wan Thung Chan, Thaarenee Wiswannadan

OP072 Who comes and who stays: Age-specific patterns and screening habits in a subsidized mammogram program in Malaysia 97
Ang Hong Shien

OP073 Relationship between nutritional status, body composition and quality of life among paediatric cancer patients at Hospital Tunku Azizah, Kuala Lumpur 98
Chin Yi Phang, Rahmat Farhana, Shu Chin Teh, Pei Teng Lum, Mohd Jamil Sameeh, Muda Zulaiha, C-Khai Loh, Jyh Eiin Wong, Rajikan Roslee5, Bee Koon Poh

OP074 The role of BIRADS in predicting histopathology outcomes: A retrospective study of breast cancer screening at NCSM 99
Marie Pier, Tze Hui Soo

OP075 Factors Influencing the willingness and ability to return to work by cancer survivors in Malaysia 100
Sathiya Vani Subramaniam, Petrolina Joseph

OP076 Understanding caller behaviour and service needs: A profile-based analysis of CIS enquiries in 2024 101
Chen Kai Xin, Nurul Atiqah Zulkefli

OP077 Regional determinants of HPV vaccine implementation in Malaysia: A cross-sectional analysis from the "leaving no one behind 1.0" programme (Jan 2024–Jan 2025) 102
Vignesvari Subramaniam

OP078 Assessing the understandability and actionability of the english BEAUTY booklets among malaysian audiences Using PEMAT-P" 103
Janese Wong1, Kavinash Loganathan, Ssarvinna Haran Manoharan, Nur Athirah Syazwani Mohd Hasri, Aisyahasannah Sulaiman, Thaarenee Wiswannadan, Jessica Anne Canute, Wan Thung Chan, Mandy Thoo, Saunthari Somasundaram, Murallitharan Munisamy

OP079 Uncovering lifestyle gaps in cancer risk: A focus on body weight and movement 104
Ssarvinna Manoharan Haran, Janese Wong, Kavinash Loganathan, Nur Athirah Syazwani Mohd Hasri, Aisyahasannah Sulaiman, Thaarenee Wiswannadan, Jessica Anne Canute, Wan Thung Chan, Mandy Thoo, Saunthari Somasundaram, Murallitharan Munisamy

OP080 Promoting preventive health behaviors through multilingual digital cancer education: Lessons from the BEAUTY programs 105
Aisyahasannah Sulaiman, Ssarvinna Manoharan Haran, Janese Wong, Kavinash Loganathan, Mohd Ishak Abir, Nur Athirah Syazwani Mohd Hasri, Puteri Sakinah, Thaarenee Wiswannadan, Jessica Anne Canute, Wan Thung Chan, Mandy Thoo, Saunthari Somasundaram, Murallitharan Munisamy

OP081 Analysing the reach and engagement of cancer-related educational posts on instagram: Insights from NCSM's 2024 educational posts 106
Nur Athirah Syazwani Mohd Hasri, Aisyahasannah Sulaiman, Ssarvinna Manoharan Haran, Janese Wong, Kavinash Loganathan, Mohd Ishak Abir, Puteri Sakinah, Thaarenee Wiswannadan, Jessica Anne Canute, Wan Thung Chan, Mandy Thoo, Saunthari Somasundaram, Murallitharan Munisamy

CONTENTS Page

OP082	Assessing the feasibility and impact of a hospital-based psychosocial support: A one-year review of the psycho-oncology clinic *Jefferson Ng Khai-Quan, Murallitharan Munisamy*	107
OP083	Bridging the gap: Optimizing psychosocial support for cancer-affected youth *Eunice Chan Xiou Zhi, Jefferson Ng Khai-Quan, Murallitharan Munisamy*	108
OP084	Bridging the gap: The role of national cancer society Malaysia halfway homes in alleviating financial burdens for underprivileged cancer patients undergoing treatment in major Malaysian cities *Fion Ong Xin Yue, Vidyarubini Gawthaman, Petronilla Joseph, Sathiya Vani Subramaniam, Murallitharan Munisamy*	109
OP085	Scaling HPV vaccination through public-private collaboration: Lessons from Johor's LNOB initiative *Leevyadhashiny Ganasan*	110
OP086	98 Shades of grey - health literacy and the BIRADS-3 dilemma among Malaysian women *Kavinash Loganathan, Murallitharan Munisamy*	111

P001

Beyond medical treatment - addressing the psychosocial needs of cancer patients and their family caregivers

Beverly Lim Høeg

Danish Cancer Institute, Cancer Survivorship Research Group, 2100, Copenhagen, Denmark

Track: Allied Health
Theme: Survivorship

ABSTRACT

Cancer affects not just the body, but also the mental health of cancer patients and their informal caregivers, such as family members. Psycho-oncology is an interdisciplinary field that focuses on the psychological, emotional and social aspects of cancer care from diagnosis to end-of-life. In this presentation, I will give a brief overview of the field of psycho-oncology, identify key areas of research and present some of my own research in the field which have been carried out with the International Psycho-Oncology Society (IPOS) and with my research group at the Danish Cancer Institute. This includes a global review of psychosocial care for cancer survivors in national cancer control plans (NCCP), an international survey of psychosocial care in low/middle- and high-income countries identifying facilitators and barriers, and two clinical trials testing psychological interventions: 1) the Resilient Caregivers randomized trial testing a group intervention aimed at reducing anxiety among spousal cancer caregivers (Clinicaltrials.gov identifier: NCT04610034), and 2) the SOFUS feasibility trial testing a supportive intervention in families of children in pediatric palliative care (Clinicaltrials.gov ID: NCT04883151). Addressing the psychosocial needs of cancer patients and their families should be an integral part of comprehensive cancer care and ongoing efforts are needed to improve support for those affected by cancer and ensure access to these services.

Keywords: Psycho-oncology, psychosocial care, unmet needs, cancer caregivers, cancer survivorship

Defend your health with every bite: Nutrition and cancer prevention

Ho Chiou Yi

Department of Dietetic and Food Service, National Cancer Institute, 62250, Putrajaya, Malaysia

Track: Allied Health
Theme: Prevention

ABSTRACT

Nutrition is increasingly recognized as a key pillar in cancer prevention, with strong evidence showing that dietary choices significantly modulate cancer risk across the lifespan. Landmark reports from the World Cancer Research Fund (WCRF) and the American Institute for Cancer Research (AICR) affirm that nutrition influences carcinogenesis through inflammation control, oxidative stress reduction, immune modulation, and metabolic regulation. This plenary session will synthesize major findings on how plant-based dietary patterns rich in fruits, vegetables, whole grains, legumes, and omega-3 fatty acids act as protective factors against cancer. In contrast, it will critically examine how processed meats, refined sugars, alcohol, and ultra-processed foods increase cancer risk. Special focus will be given to the antioxidant, anti-inflammatory, and anti-proliferative mechanisms of bioactive compounds, supported by leading evidence from journals such as The Lancet Oncology and Cancer Research. The session will also evaluate the AICR Recommendations for Cancer Prevention, emphasizing their role in guiding dietary, physical activity, and weight management strategies. Practical, culturally sensitive interventions tailored to Malaysia and Southeast Asia will be highlighted, addressing local dietary practices and dispelling common myths such as the overreliance on traditional remedies, misconceptions about "heaty" foods, and fatalistic views of cancer. Strategies will include the promotion of traditional, nutrient-dense foods like ulam and indigenous vegetables, alongside evidence-based education on portion control and food safety. Emerging areas such as nutritional epigenetics, nutrigenomics, and gut microbiome research will also be explored, offering new insights into precision nutrition and its potential to transform cancer prevention strategies. Ultimately, defending health is a lifelong commitment strengthened with every mindful choice. "Through every mindful choice, we can nourish strength, protect health, and plant the seeds of cancer prevention for a healthier tomorrow."

Keywords: Cancer, prevention, food myths, anti-inflammation, plant-based

Cancer and culture: Beliefs and barriers that inhibit early detection and treatment of breast cancer among indigenous womenfolk in rural Sarawak

Melissa Siaw Han Lim[1], Fitri Suraya Mohamad[2], Keng Sheng Chew[3], Nafeesa Mat Ali[4], Yolanda Augustin[4]

[1]Department of Paraclinical Sciences, Faculty of Medicine and Health Sciences, UNIMAS, 94300, Kota Samarahan, Sarawak, Malaysia, [2]Institute of Borneo Studies, UNIMAS, 94300, Kota Samarahan, Sarawak, Malaysia, [3]Faculty of Medicine and Health Sciences, Faculty of Medicine and Health Sciences, UNIMAS, 94300, Kota Samarahan, Sarawak, Malaysia, [4]Clinical Academic Group, Institute for Infection and Immunity, City St George's University of London, London, United Kingdom

Track: Determinants of Health
Theme: Screening and Diagnosis

ABSTRACT

Introduction: Breast cancer is the most prevalent cancer among Malaysian women, with rural and indigenous communities in Sarawak experiencing significant delays in diagnosis and treatment. Despite national guidelines promoting early detection through clinical breast examination and mammography, uptake remains low. Cultural beliefs, stigma, and limited access are hypothesised to contribute to these disparities. This study aimed to explore sociocultural and structural factors influencing breast cancer awareness and health-seeking behaviours among indigenous women in rural Sarawak. **Materials and Methods:** A qualitative study was conducted involving twenty indigenous women aged 20 to 70 years from four rural communities representing diverse geographical contexts: coastal, riverine, highland, and semi-rural. Participants were recruited through community outreach programmes held between March and September 2023. Semi-structured interviews were conducted in Bahasa Malaysia or Bahasa Iban, transcribed, translated, and thematically analysed using NVivo software. Coding was performed independently by three researchers and final themes were developed through consensus. **Results:** Five major themes were identified: (1) local belief and the fatalism culture coupled with an incline towards the use of traditional remedies; (2) stigma and embarrassment surrounding breast symptoms, contributing to silence and avoidance; (3) limited knowledge of breast cancer signs, risk factors, and screening options; (4) barriers to healthcare access especially geographical, financial, and logistical constraints; and (5) strong interest in learning about breast health when information is presented in culturally appropriate forms. None of the participants had previously undergone mammography, and most had not practised regular breast self-examination. **Conclusion:** The interplay of cultural norms, stigma, and systemic barriers contributes to delayed breast cancer detection in rural Sarawak. Tailored interventions—including community-based education, mobile screening services, and engagement with local leaders and communities—are essential to promote early detection and reduce breast cancer disparities in these underserved communities.

Keywords: Breast cancer, indigenous women, rural health, cultural beliefs, early detection

Metabolic disorders, metabolites, and risk of lung cancer: Evidence from population-based prospective cohort studies

Mengmeng Li

Sun Yat-sen University Cancer Center (SYSUCC), 510060, Guangzhou, Peoples Republic of China

Track: Medical Professionals
Theme: Prevention

ABSTRACT

Introduction: We aimed to investigate the associations of metabolic syndrome (MetS) and circulating metabolic biomarkers with the risk of lung cancer and the potential underlying pathways. **Materials and Methods:** Multivariable Cox regression models were used to estimate the hazard ratio (HR) of MetS-related variables on lung cancer risk, both overall and by histologic subtype, in the UK Biobank. Stratified analyses were conducted by sex and tobacco use status. Nuclear magnetic resonance metabolomic profiling was conducted on baseline plasma samples. HRs were estimated for 164 metabolic biomarkers. Pathway analysis was conducted to investigate the potential metabolic pathways. **Results:** The HRs of MetS were 1.21 (95%CI: 1.09-1.33), 1.28 (95%CI: 1.10-1.50), and 1.16 (95%CI: 0.94-1.44) for the overall risk of lung cancer, adenocarcinoma, and squamous cell carcinoma, respectively. The relationship between MetS and lung cancer was modified by sex, with a stronger effect in women (P=0.031). The risk of lung cancer resulting from MetS was elevated mainly among tobacco users, although the modification effect of tobacco use was not statistically significant. A total of 109 metabolic biomarkers (30 metabolites and 79 lipoprotein subfractions) were associated with the risk of lung cancer. Glycoprotein acetyls demonstrated a positive association with lung cancer risk [HR = 1.13 (95%CI: 1.04, 1.22)]. Negative associations with lung cancer were found for albumin, acetate, valine, alanine, glucose, citrate, omega-3 fatty acids, linoleic acid, etc. The pathway analysis showed that the "linoleic acid metabolism" was statistically significant after the FDR adjustment (P=0.0496). **Conclusion:** The increased risk of lung cancer associated with MetS and multiple metabolites suggests the importance of taking metabolic status and markers into consideration for the primary prevention of lung cancer and the selection of high-risk populations for lung cancer screening.

Keywords: Metabolic disorders, lung cancer, population-based, cancer prevalence, cancer prevention

Nasopharyngeal carcinoma in Malaysia: A path toward better outcomes

Yap Lee Fah

Faculty of Dentistry, Universiti Malaya, 50603, Kuala Lumpur, Malaysia

Track: Research
Theme: Treatment

ABSTRACT
It is over 50 years since the Epstein-Barr virus (EBV), the first human cancer virus, was discovered. EBV remains the most common persistent viral infection globally, with approximately 95% of the world's population sustaining an asymptomatic life-long infection. Its strongest cancer association is with undifferentiated nasopharyngeal carcinoma (NPC), a malignancy endemic to southern China and Southeast Asia, including Malaysia, where the Bidayuh people have the highest incidence rates in the world. Indeed, many unique characteristics of NPC could be attributable to the virus. The presence of EBV in virtually all tumour cells of NPC provides unique opportunities for biomarker and therapeutic intervention, including immunotherapy and interventions aimed at EBV-driven pathways. Plasma EBV DNA, in particular, has emerged as a valuable tool for post-treatment surveillance and disease monitoring. Immune checkpoint inhibitors, especially PD-1/PD-L1 blockers, are now being used to treat NPC, particularly in recurrent or metastatic settings. However, in Malaysia, the use of these approaches is still limited due to cost and access issues. This presentation will provide an overview of current NPC management in Malaysia, highlight emerging treatment options, and suggest practical ways to improve patient outcomes.

Keywords: Nasopharyngeal carcinoma, epstein-barr virus, NPC, EBV, Malaysia

Lessons from biomarker-driven oncology trials: Case studies of bench-to-bedside translation

Kong Li Ren

Cancer Discovery and Regenerative Medicine, Lee Kong Chian School of Medicine, Nanyang Technogical University, 636921, Nanyang Drive, Singapore

Track: Research
Theme: Treatment

ABSTRACT

Advances in sequencing and computational biology have revealed the extensive heterogeneity of cancer genomes, accelerating the evolution of precision oncology. Our research focuses on developing integrative, clinically applicable approaches to enhance cancer diagnosis and treatment stratification. Here, I present two active cases demonstrating the feasibility of bench-to-bedside translation. First, we developed strategies to identify pathogenic variants within Asian-specific polymorphisms and correlated these findings with real-world clinical outcomes. This enabled the design of biomarker-driven clinical trials incorporating cell-free molecular testing for patient stratification. Second, we applied serum proteomics to identify circulating biomarkers predictive of early treatment response. This work leveraged insights from randomized, open-label trials showing synergistic effects between VEGF and PD-1 pathway inhibition in nasopharyngeal carcinoma. Together, these studies highlight the clinical value of liquid biopsy-based proteogenomics in improving diagnostics, informing therapeutic decisions, and advancing personalized cancer care.

Keywords: Asian cancer, proteogenomics, bench to bedside translation, head and neck cancers

Updates on diagnosis and prognosis of renal cell carcinoma

Retnagowri Rajandram[1], Ning Yi Yap[2], Glenda Carolyn Gobe[3]

[1]Department of Surgery, Faculty of the Medicine, Universiti Malaya, 50603, Kuala Lumpur, Malaysia, [2]Laboratory, Subang Jaya Medical Centre, Malaysia, Subang Jaya, Selangor, Malaysia, [3]Kidney Disease Research Collaborative, University of Queensland, Translational Research Institute, and School of Biomedical Sciences, Brisbane, Queensland, Australia

Track: Research
Treatment: Screening and Diagnosis

ABSTRACT

Renal cell carcinoma (RCC) represents the most frequent form of kidney cancer, with its incidence steadily increasing globally [1, 2]. There have been significant strides made in enhancing the diagnosis and prognosis of RCC, driven by advances in biomarker research and artificial intelligence (AI) [3]. Here we aim to provide an overview of the current status in regards to diagnosis and prognosis of RCC. Our own work has investigated molecules involved in apoptosis and tumor-promoting inflammation [4-13] as well as obesity-related factors. Measurements such as body mass index, waist circumference, and waist-hip ratio, when combined with other risk factors like age and sex, have shown validity in predicting RCC outcomes [14]. Notably, adipokines like adiponectin [15] and tissue leptin/leptin receptor have emerged as potential biomarkers, aiding in distinguishing RCC subtypes and assessing disease progression [16-18]. Given these advances, the prognostic capabilities of other adipokines, including omentin, visfatin, apelin, and resistin, warrant further investigation [19]. In parallel, advances in liquid biopsy techniques offer a less invasive alternative to traditional tissue biopsies for RCC diagnosis and prognosis. Analytes derived from urine, plasma, serum, and feces, such as circulating cell-free DNAs and RNAs, exosomes and proteins, have shown promising clinical outcomes. Despite these advances, the integration of liquid biopsies into routine clinical practice is hindered by the need for standardized protocols and larger, multi-center studies to validate their efficacy [20]. Furthermore, the integration of AI, particularly deep learning models, has revolutionized RCC diagnostics, predicting patient survival hence holds potential value in personalized medicine [21]. Collectively, these advances will be highlighted to demonstrate a transformative era in RCC management, emphasizing the importance of multidisciplinary approaches that combine biomarker research, liquid biopsy innovations, and AI-driven diagnostics to enhance patient outcomes.

Keywords: Biomarker, diagnosis, kidney, obesity, urology

Cancer and immunotherapy

Voon Pei Jye

Department of Radiotherapy, Oncology and Palliative Care, Sarawak General Hospital, 93250, Kuching, Sarawak

Track: Medical Professionals
Theme: Treatment

ABSTRACT

Cancer immunotherapy has revolutionized oncology by leveraging the body's immune system to target and eliminate cancer cells. Among the most successful immunotherapies are immune checkpoint inhibitors, particularly anti-CTLA-4 and anti-PD-1/L1 agents. Their efficacy has been demonstrated across a broad spectrum of cancer subtypes. The landscape of cancer immunotherapy continues to expand rapidly beyond the currently approved agents. Innovations such as bispecific immune checkpoint inhibitors, CAR T-cell therapies, cancer vaccines, and bispecific T-cell engagers are under intense investigation. In particular, the development of next-generation checkpoint inhibitors and combinatorial strategies—pairing immunotherapy with another immunotherapy, targeted therapy, chemotherapy, or radiation—holds promise for overcoming resistance mechanisms and enhancing efficacy. Despite the remarkable progress, significant challenges remain, particularly in identifying reliable predictive biomarkers for immunotherapy response. Currently utilized biomarkers, such as PD-L1 expression, tumor mutational burden, and microsatellite instability, have limitations in sensitivity and specificity. Ongoing research aims to uncover more robust biomarkers to better stratify patients who are most likely to benefit from immunotherapy. While immunotherapies have transformed cancer treatment outcomes, they are also associated with unique adverse events known as immune-related toxicities. These toxicities can affect any organ system. Early recognition and a multidisciplinary management approach are critical to effectively manage these adverse events. Essentially, immunotherapies are undeniably transformative anti-cancer treatments that have significantly improved overall survival and quality of life for many cancer patients. Continued multidisciplinary collaboration, innovative clinical trials, and patient-centric approaches will be pivotal in advancing this revolutionary field.

Keywords: Immune checkpoints inhibitor, predictive biomarker, immune related side effects, microbiome, tumor microenvironment

The overlapping burden: Prevalence of comorbidities in cancer survivorship

Hoo Yee-Yin, Nirmala Bhoopathy

Faculty of Medicine, Universiti Malaya, 50603, Kuala Lumpur, Malaysia

Track: Research
Theme: Survivorship

ABSTRACT

Introduction: The prevalence of comorbidities among cancer survivors is rising. However, it is unclear whether specific comorbidity patterns are associated with treatment disparities and impaired functional status. We identified comorbidity patterns and assessed their association with treatment receipt and functional status among individuals with breast and colorectal cancer. **Materials and Methods:** This cross-sectional study analyzed data from three cancer cohorts using validated questionnaires and medical records. Demographics, comorbidities, disease- and treatment-related characteristics were collected. Latent class analysis (LCA) identified comorbidity patterns based on 20 disease categories. Multivariable logistic regression assessed associations between comorbidity classes with treatment receipt and functional status. **Results:** Among 1,117 cancer survivors, 62.2% had ≥1 comorbidity. LCA identified three comorbidity patterns: low, cardiometabolic, and multisystem. The multisystem group had significantly poorer functional status (aOR: 25.37, 95%CI: 5.88-109.43) and lower odds of receiving chemotherapy (aOR: 0.08, 95%CI: 0.08, 95%CI: 0.04 – 0.19), radiotherapy (aOR: 0.33, 95%CI: 0.14-0.74), and anti-HER2 therapy (aOR: 0.09, 95%CI: 0.02-0.50), but higher odds of receiving immunotherapy (aOR: 123.68, 95%CI 40.69 – 375.92). The cardiometabolic group showed no significant treatment differences. LCA showed improved model fit for treatment and functional status relative to the modified Charlson Comorbidity Index (mCCI). **Conclusion:** This study highlights the substantial comorbidity burden among cancer survivors and demonstrates that LCA provides more refined risk stratification than mCCI. The LCA-defined multisystem group had significantly reduced treatment receipt and poorer functional outcomes, unlike the cardiometabolic group, despite similar mCCI scores. These findings support the use of LCA to identify clinically vulnerable subgroups and inform treatment decisions. While results from breast and colorectal cancers may inform broader care, generalization to rarer cancers requires caution. Future research should integrate comorbidity classes into treatment planning to better support medically complex cancer populations.

Keywords: Comorbidity, cancer, cardiometabolic

Integrating onco-fertility into survivorship care plans

Mohd Faizal Ahmad

Advanced Reproductive Centre, Department of Obstetrics and Gynaecology, Hospital Canselor Tuanku Mukhriz (HCTM) UKM, Faculty of Medicine, National University of Malaysia, 56000, Jalan Yaacob Latif, Bandar Tun Razak, Cheras, Kuala Lumpur, Malaysia

Track: Medical Professionals
Theme: Survivorship

ABSTRACT

Integrating oncofertility care into survivorship care plans incorporates the informed decision of future fertility, guidance of type of oncofertility option aiming for better family desire following the survivorship era. In Malaysia, current oncofertility options include sperm freezing, oocyte retrieval, and embryo cryopreservation. Since 2020, ovarian tissue cryopreservation services have been offered under experimental treatment through vitrification. To date, most cancer survivors in Malaysia have been given the option of oncofertility as part of their survivorship plan. An integrated network of oncofertility referrals has been established locally to ensure that referrals are made without logistical delays prior to primary cancer treatment. However, awareness of these referrals among clinicians and acceptance of oncofertility treatment among cancer survivors remain low at this early stage of implementation. Therefore, additional strategies should be adopted to encourage greater uptake of oncofertility treatment in Malaysia, aiming to improve reproductive outcomes for cancer survivors.

Keywords: Oncofertility, survival care, fertility preservation, cryopreservation, ovarian tissue cryopreservation

Bridging conventional and traditional medicine in survivorship care: Towards integrated healing in Malaysia

Lim Ren Jye, Chan Si Yan

Sunway TCM Centre, Sunway Healthcare Group, 47500, Bandar Sunway, Petaling Jaya, Selangor, Malaysia

Track: Allied Health
Theme: Survivorship

ABSTRACT

Cancer survivorship poses multifaceted challenges that extend beyond the end of clinical treatment, requiring a holistic and patient-centered approach. In Malaysia's culturally diverse landscape, many survivors incorporate Traditional and Complementary Medicine (TCM)—particularly Traditional Chinese Medicine—alongside conventional therapies to manage long-term side effects, support emotional well-being, and improve overall quality of life. This presentation explores the opportunities and challenges of bridging conventional oncology and traditional medicine in survivorship care. It focuses on the shared goals of both systems: enhancing physical recovery, managing chronic symptoms, supporting emotional and spiritual health, and reducing the risk of recurrence. Drawing from recent research, clinical experience, and stakeholder insights, we present successful integrative care models involving breast, prostate, head and neck, pancreatic, and hepatocellular cancers. These examples highlight how thoughtful integration—when guided by evidence, safety, and mutual respect—can offer meaningful benefits for survivors. We also address barriers to integration, including limited cross-disciplinary communication, lack of standardized protocols, and the need for greater awareness among both patients and healthcare providers. Strategies for overcoming these gaps include improved education, policy development, and inter-professional collaboration. Malaysia is uniquely positioned to lead in the development of culturally sensitive, integrative survivorship care that honors traditional healing practices while upholding the standards of modern medicine. By reimagining survivorship care as a partnership between these systems, we can empower patients, respect cultural identities, and promote a more inclusive, compassionate model of healing—one that supports not just survival, but whole-person recovery.

Keywords: Neoplasms/therapy, complementary therapies, integrative medicine, survivors/psychology, cultural competency

Colorectal cancer in South East Asia – Trends, challenges and treatment

Babu Sukumaran

The Brunei Cancer Centre, Jerudong Park Medical Centre, 3122, Brunei-Muara, Brunei

Track: Medical Professionals
Theme: Screening and Diagnosis

ABSTRACT
Colorectal Cancer is made up of cancers affecting the colon and rectum. It is now one of the leading causes of cancer mortality in the South East Asia. However over the past decade , there has been an increasing trend of colorectal cancer in younger population below age of 50 years, and in some cases more aggressive disease. In South East Asia , there is still poor uptake by the public to come for early screening especially in rural areas. There is a need to improve public health awareness and also to look out for "red flag" signs -like passing blood in the stools, abnormal bowel movements, weight loss, especially also in the presence of strong family history of colon cancer. In many of the countries , unfortunately,40 to 50% of cases are picked up in more advanced stages like Stage 3 or 4. This reduces the chance of "cure". Public awareness of healthy diet, with lower fat, higher fibre, reduced red meat, and reduced processed food intake need to be inculcated from younger age groups. Awareness of risks of smoking and controlling obesity with diet advice and regular exercise is important and reducing our sedentary life style. There is a need for early access for colonoscopy, so that polyps can be detected and removed and potentially reduce the chance of it turning malignant. Public awareness through the media is a key component.

Keywords: South east asia, colorectal, rising trends, public awareness, early detection

Breast cancer in asian women: Why how you live & where you live matter

Ang Boon Hong[1], Shivaani Mariapun[1], Farahida Mohd Farid[2], Imelda Suhanti Ishak[2], Muhammad Faiz Md Taib[2], Asfarina Ab Rahim, Lenjai Anak Jembai[2], Tania Islam[3], Kartini Rahmat[4]

[1]Cancer Prevention and Population Science, Cancer Research Malaysia, Subang Jaya Medical Centre South Tower, Level 1, No. 1, Jalan SS 12/1A, 47500 Subang Jaya, Selangor Darul Ehsan, Malaysia, [2]Majlis Kanser Nasional, Kuala Lumpur, Malaysia, [3]Department of Surgery, University of Malaya, Faculty of Medicine, Kuala Lumpur, Malaysia, [4]Biomedical Imaging, University of Malaya Research Imaging Centre, Kuala Lumpur, Malaysia

Track: Determinants of Health
Theme: Screening and Diagnosis

ABSTRACT

Breast cancer rates are rising rapidly across Asia, in contrast to the plateauing rates observed in Europe countries. In Malaysia, incidence is highest among Chinese and Indian women, yet access to national screening is limited, and there are no locally validated risk assessment tools available. To address this, we conducted a systematic review of Asian studies involving nearly six million Asian women and quantified the population attributable risk (PAR) for each factor. Although relative risks were broadly consistent with those observed in European populations, exposure prevalence varied substantially. Mammographic density contributed the highest PAR, followed by lifestyle factors such as body mass index (BMI) and passive smoking—both were notably more prevalent in Asian populations. In the absence of prospective cohort data, we used mammographic density as a surrogate biomarker to explore urban–rural differences in risk. Among ~10,000 Malaysian women participated in opportunistic screening programs, those in rural areas had less dense breasts, partly due to higher parity and breastfeeding—both associated with lower density. These findings underscore a key message: How You Live Matters — and Where You Live Partly Shapes It. Understanding population-specific exposures is essential to develop effective, context-specific cancer prevention strategies.

Keywords: Breast cancer, attributable risk, mammographic density, lifestyle, reproductive

Balancing the needs of colorectal cancer survivors

Kenneth Voon

Colorectal Unit, Department of General Surgery, Sarawak General Hospital, 93250, Kuching, Sarawak, Malaysia

Track: Medical Professionals
Theme: Survivorship

ABSTRACT
With advances in treatment, colorectal cancer is increasingly curable. Colorectal cancer treatments can cause long-term side effects such as altered bowel and sexual functioning, body image changes, pain and fatigue, which can trigger lifestyle changes and inhibit participation in activities, impacting quality of life. Survivors often face challenges like long-term effects of treatment, the potential for recurrence, and adjustments to their daily lives. To guide effective supportive care, it is important to understand the experiences and needs of CRC survivors. This includes addressing long-term health needs, quality of life, and addressing potential physical and psychological challenges related to the cancer and its treatment. Balancing the needs of colorectal cancer (CRC) survivors involves a holistic approach that addresses their physical, emotional, psychological, and social well-being, guided by epidemiological data and evidence based clinical and supporting interventions. Managing Colorectal cancer survivors requires a multidisciplinary team effort including clinicians, supporting clinical services and allied health personnels. It cannot rely solely on medical expertise care alone, but rather a public health care agenda. Important services includes Enterostoma therapist, Social Welfare and Social Security Organizations, Psychiatry and Psychotherapy services, Cancer Survivor Support Group incorporated into a well-structured Colorectal Cancer Navigation under a new concept of primary health care.

Keywords: Colorectal cancer, survivorship, holistic approach, multidisciplinary, colorectal cancer navigation

Transforming care: Development and application of the needs assessment tool for colorectal cancer survivors (NeAT-CC)

Nur Nadiatul Asyikin Bujang, Nirmala Bhoopathy

Social Preventive Medicine Department, Universiti Malaya, Faculty of Medicine, Department of Social and Preventive Medicine, Level 5, Block I, 50603 Kuala Lumpur, Federal Territory of Kuala Lumpur

Track: Allied Health
Theme: Survivorship

ABSTRACT

In Malaysia's multi-ethnic society, living beyond colorectal cancer brings challenges that extend far beyond the clinical setting. We asked: what are the most pressing needs of survivors, and how do these differ across cultural, financial, and treatment-related contexts? Between 2022 and 2024, we co-developed and validated a culturally grounded assessment tool with survivors and healthcare professionals so that it could ask the right questions. The tool was deployed in a nationwide survey of over 600 adults across public and private oncology centres. Findings revealed consistently high needs especially around healthcare access, emotional support, and practical challenges of survivorship. Needs were not evenly distributed with certain demographic and clinical subgroups of patients displaying higher vulnerabilities, pointing to gaps that current systems may overlook. This study offers a rare, structured look into what it means to survive cancer in Malaysia and invites new thinking on how to shape more responsive, equitable survivorship care.

Keywords: Survivorship, colorectal cancer, needs assessment, cancer survivors

From fork to fight: Exploring dietary patterns in colorectal cancer prevention

Mohd Razif Sharil

Centre for Healthy Ageing and Wellness (HCARE), Faculty of Health Sciences, Universiti Kebangsaan Malaysia, Centre for Healthy Ageing and Wellness Faculty Health Sciences Universiti Kebangsaan Malaysia Jalan Raja Muda Abdul Aziz 50300 Kuala Lumpur

Track: Research
Theme: Prevention

ABSTRACT

Epigenetic alterations, particularly aberrant DNA methylation, are a hallmark of cancer and offer promising applications in early detection, disease monitoring, and risk stratification. Advances in genome-scale methylation profiling and machine learning have enhanced the potential of these biomarkers across diverse cancer types. This presentation highlights the evolution of epigenetic biomarkers, and focuses on recent studies in breast cancer and small intestinal neuroendocrine tumours (siNETs). In a large prospective case–control study nested within the EPIC-Heidelberg cohort (n=702), reduced representation bisulphite sequencing (RRBS) was used to profile DNA methylation in buffy coat samples. Cancer-specific methylation changes were detected in regions associated with SURF6 and REXO1/CTB31O20.3, with signal intensity correlating with time to diagnosis. A machine learning classifier based on these features achieved 76.5% accuracy in predicting future breast cancer cases. These findings support the use of blood-based methylation signatures for early risk stratification. In a separate multi-omics study of siNETs, transcriptomic, genetic, and DNA methylation profiling identified four molecular subtypes with distinct biological features and clinical relevance. These included subtypes linked to specific enteroendocrine differentiation patterns, an immune-enriched subtype, and a mesenchymal-like subtype associated with poor prognosis and treatment resistance, likely driven by cancer-associated fibroblast infiltration. DNA methylation was instrumental in distinguishing multifocal from unifocal tumours, underscoring its utility in tumour classification and outcome prediction. Collectively, these findings demonstrate the utility of epigenetic biomarkers in cancer detection and prognosis. They highlight the potential of methylation profiling in both common and rare cancers to inform personalised care, early intervention, and targeted treatment strategies.

Keywords: DNA methylation, epigenetic biomarkers, risk stratification, predictive biomarkers, neuroendocrine tumours

The epigenetic edge: Biomarkers for cancer monitoring and risk stratification

Felicia Chung

Department of Biomedical Sciences, Sunway University, 47500, Bandar Sunway, Selangor, Malaysia

Track: Research
Theme: Screening and Diagnosis

ABSTRACT

Epigenetic alterations, particularly aberrant DNA methylation, are a hallmark of cancer and offer promising applications in early detection, disease monitoring, and risk stratification. Advances in genome-scale methylation profiling and machine learning have enhanced the potential of these biomarkers across diverse cancer types. This presentation highlights the evolution of epigenetic biomarkers, and focuses on recent studies in breast cancer and small intestinal neuroendocrine tumours (siNETs). In a large prospective case–control study nested within the EPIC-Heidelberg cohort (n=702), reduced representation bisulphite sequencing (RRBS) was used to profile DNA methylation in buffy coat samples. Cancer-specific methylation changes were detected in regions associated with SURF6 and REXO1/CTB31O20.3, with signal intensity correlating with time to diagnosis. A machine learning classifier based on these features achieved 76.5% accuracy in predicting future breast cancer cases. These findings support the use of blood-based methylation signatures for early risk stratification. In a separate multi-omics study of siNETs, transcriptomic, genetic, and DNA methylation profiling identified four molecular subtypes with distinct biological features and clinical relevance. These included subtypes linked to specific enteroendocrine differentiation patterns, an immune-enriched subtype, and a mesenchymal-like subtype associated with poor prognosis and treatment resistance, likely driven by cancer-associated fibroblast infiltration. DNA methylation was instrumental in distinguishing multifocal from unifocal tumours, underscoring its utility in tumour classification and outcome prediction. Collectively, these findings demonstrate the utility of epigenetic biomarkers in cancer detection and prognosis. They highlight the potential of methylation profiling in both common and rare cancers to inform personalised care, early intervention, and targeted treatment strategies.

Keywords: DNA methylation, epigenetic biomarkers, risk stratification, predictive biomarkers, neuroendocrine tumours

The next step in cancer screening and diagnosis

Eliana Ahmad

Sector for Cancer Prevention and Control, Disease Control Division (NCD) Ministry of Health, 62590, Putrajaya, Malaysia

Track: Determinants of Health
Theme: Screening and Diagnosis

ABSTRACT
Cancer remains a leading cause of death in Malaysia, with lung, colorectal, and breast cancers ranking among the top causes. The Malaysia National Cancer Registry reveals that a significant proportion of cases are diagnosed at late stages, underlining the urgent need for more effective screening and early detection strategies. The National Strategic Plan for Cancer Control Programme (NSPCC) 2021–2025 prioritizes downstaging of major cancers and improving survival rates by enhancing early detection, diagnosis, and treatment. Despite these efforts, challenges persist, including gaps in screening policies for high-burden cancers, limited epidemiological data, risks of overdiagnosis, public unawareness, and significant resource constraints. To address these issues, the next steps in cancer screening and diagnosis should embrace precision public health, personalized risk-based approaches, and technological advancements. Among factors worth exploring include multi-cancer screening, deploying liquid biopsy technologies, and integrating artificial intelligence (AI) for enhanced diagnostic accuracy. The Lung Health Initiative Malaysia 2025–2030 exemplifies this shift, emphasizing AI-enabled screening tools, integrated care pathways, strengthening the primary healthcare services and digital data systems across both public and private sectors. This forward-looking framework calls for multi-sectoral collaboration, investment in infrastructure and human capital, and policy innovations to transform cancer care. With these integrated efforts, Malaysia aims to improve outcomes, reduce premature cancer mortality, and ensure equitable access to high-quality screening and care services nationwide.

Keywords: Cancer, screening, artificial intelligence

Building hope and empowering lives through the lens of palliative care

Saiful Abdul Latif

Department of Palliative Medicine and Supportive Services, National Cancer Institute, 62250, Putrajaya, Malaysia

Track: Medical Professionals
Theme: Survivorship

ABSTRACT

Introduction: In palliative care, hope often transcends cure. This presentation explores the role of hope as a dynamic, evolving force that continues to influence patient well-being even in the face of life-limiting illness. Drawing upon theoretical models and real-world clinical experience, we discuss how healthcare professionals can nurture hope in patients navigating advanced cancer. **Materials and Methods:** Theoretical perspectives, including Snyder's Hope Theory (comprising goals, pathways, and agency), were applied in clinical practice to support patient-centered care. A case study of a 71-year-old man with metastatic colorectal cancer is presented to illustrate how palliative care interventions can sustain hope and dignity until end of life. A review of other qualitative studies related to hope were identified: the nature of hope, its sources and barriers, and its manifestations. **Results:** Outcome of the case presented is discussed based on literature examining components of hope and methods to foster them. Hope was found to be sustained through trust, communication, symptom control, spiritual support, and the fostering of short-term goals. Even when cure was no longer possible, hope remained—enabling meaningful experiences. **Conclusion:** Hope in palliative care is not static nor dependent on prognosis. It is a resilient, subjective experience that enhances quality of life when nurtured through relational, emotional, and practical support. Recognizing and supporting hope in all its forms is essential to holistic palliative care

Keywords: Hope, palliative care, advanced cancer

Screen, eat, live: Winning against colorectal cancer

Luqman Mazlan

Department of Surgery, Picaso Hospital, Hospital Picaso 110, Jalan Professor Khoo Kay Kim Seksyen 19, 46300, Petaling Jaya, Selangor, Malaysia

Track: Allied Health
Theme: Screening and Diagnosis

ABSTRACT

Colorectal cancer (CRC) remains one of the most common and preventable cancers worldwide. Early detection through regular screening, combined with healthy lifestyle choices, significantly reduces the risk of diagnosis and improves survival outcomes. This presentation highlights the three essential pillars in the fight against colorectal cancer: screening, nutrition, and lifestyle. Firstly, evidence shows that timely screening — including fecal occult blood tests, colonoscopy, and other diagnostic tools — can detect CRC at its earliest, most treatable stages, often before symptoms appear. Secondly, dietary habits play a crucial role; diets rich in fiber, fruits, and vegetables, and low in processed meats and excessive red meat, have been consistently linked to reduced CRC risk. Finally, maintaining a healthy weight, engaging in regular physical activity, avoiding tobacco, and limiting alcohol further strengthen defenses against this disease. By embracing the "Screen, Eat, Live" approach, individuals can take proactive steps to protect their health. This strategy empowers the public with knowledge and practical actions, transforming fear into confidence and prevention into victory. Winning against colorectal cancer is achievable — it begins with awareness, followed by action.

Keywords: Colorectal, cancer, screen, nutrition, diagnosis

Meaningful engagement of people living with cancer in their care

Hadi Abu Rasheed

Cancer Awareness and Professional Development Department, Qatar Cancer Society, Barwa Towers, Tower No. 2, Floor 20, Al Sadd 974, Doha, Qatar

Track: Allied Health
Theme: Treatment

ABSTRACT

Meaningful engagement of people living with cancer (PLWC) is increasingly recognized as a cornerstone for improving patient outcomes and healthcare quality. This abstract highlights the critical components of meaningful engagement through the application of the WHO Framework on Meaningful Engagement (2023), emphasizing its relevance within the Eastern Mediterranean Region (EMR). Comprehensive analysis demonstrates how culturally sensitive, integrated approaches significantly enhance patient experiences by addressing spiritual and emotional needs, promoting self-management, and supporting holistic wellness strategies. Effective redistribution of power, underscored by enhanced provider-patient communication and shared decision-making, empowers patients and families, although engagement in research governance remains limited due to ethical concerns and insufficient incentive structures. Capacity-building initiatives, including patient education and digital engagement tools, play a crucial role in bridging knowledge gaps, thereby facilitating informed participation in care. Furthermore, targeted storytelling and culturally tailored interventions effectively mitigate stigma, fostering greater community and healthcare system integration. Institutionalizing patient governance through committees and integrating patient voices into policy-making represent critical steps toward sustainable engagement. Nonetheless, substantial gaps remain, particularly regarding sustainable financing mechanisms to support continuous engagement practices. This synthesis underscores the interconnected nature of engagement enablers and highlights the necessity for comprehensive, patient-centered approaches to optimize cancer care delivery and patient well-being in the EMR.

Keywords: Meaningful engagement, cancer care, patient empowerment, cultural sensitivity, WHO framework

Cancer and work capabilities

Gogillan Sevaratnam

Occupational Safety & Health Unit, Hospital Sungai Buloh, 47000, Shah Alam, Selangor

Track: Determinants of Health
Theme: Survivorship

ABSTRACT
Understanding the types of cancer and their impact on work, highlighting how different diagnoses can present distinct challenges. The physical impact on work capability after treatment, acknowledging that while treatments are life-saving, they often leave lasting physical effects that can affect work performance. Beyond the physical, the profound mental health and cognitive impacts on work that cancer patients and survivors often experience. The invisible struggles are just as significant as the physical ones and require careful consideration and support. As an Occupational Health Practitioners, we need to emphasize the critical role of workplace accommodation for cancer survivors, showcasing practical strategies and adjustments that can enable individuals to return to or remain in meaningful employment. Also, we need to address the strategies to support cancer patients in the workplaces more broadly, fostering an environment of empathy and understanding. To include the importance of workplace accommodations is not just as a kindness, but as a strategic imperative for employers. This will lead to an integration of occupational health perspectives more deeply into cancer care pathways and eventually a holistic support for cancer patients, extending beyond medical treatment to encompass their social and economic well-being.

Keywords: Work accommodation, occupational health, meaningful employment, employees, employers

What can mammograms tell us about breast cancer risk in asians

Shivaani Mariapun[1], Weang Kee Ho[2], Mikael Eriksson[3], Nur Aishah Mohd Taib4, Cheng Har Yip[5], Kartini Rahmat[4], Celine M Vachon[6], Nadia Rajaram[7], Jingmei Li[8], Per Hall[9], Sara Lindstrom[10], Douglas F Easton[11], Soo Hwang Teo[7]

[1]Cancer Prevention and Population Science Unit, Cancer Research Malaysia, 2, Jalan Cuepacs 4G, Taman Koperasi Cuepacs, Batu 12, Jalan Cheras, 43000, Kajang, Selangor, Malaysia, [2]University of Nottingham Malaysia, Malaysia, [3]Karolinska Institutet, Sweden, 4University Malaya, Malaysia, [5]Subang Jaya Medical Centre, Malaysia, [6]Mayo Clinic, USA, [7]Cancer Research Malaysia, Malaysia, [8]Genome Institute of Singapore, Singapore, [9]Karolinska Institutet, Sweden, [10]University of Washington, USA, [11]University of Cambridge, United Kingdom

Track: Medical Professionals
Theme: Screening and Diagnosis

ABSTRACT

Breast cancer is the most common malignancy among women worldwide. In Malaysia, incidence rates are rising, and survival rates are poor. In our limited resource setting, risk stratification may be leveraged as a suitable approach for optimizing screening strategies. One promising biomarker that may be useful for improving risk prediction models for breast cancer in our population is mammographic density (MD). MD reflects breast tissue composition and is associated with breast cancer risk. MD however remains underexplored in Asian populations. Drawing on data from The Malaysian Mammography Study (MyMammo) and The Malaysian Breast Cancer Genetics Study (MyBrCa), using both area-based and volumetric density measures from automated tools (STRATUS and Volpara), MD is shown to be strongly associated with risk, particularly in postmenopausal women. This presentation also highlights the ethnic differences in MD among Malaysian women and how these differences correlate with population-level breast cancer risk. Our genome-wide association studies (GWAS) reveal that less than half of previously reported MD-associated SNPs in Europeans replicate in Malaysians, and putative novel loci with potential biological significance are identified. Lifestyle factors such as breastfeeding, parity, and urbanization are also associated with MD in Malaysian women. While soy intake may benefit select subgroups, larger randomized trials are needed to confirm its protective role. Future work will include AI-based texture features mammogram analysis and integrated risk models to improve breast cancer risk prediction in Asian women.

Keywords: Mammographic density, asian, breast cancer, risk prediction, mammograms

Addressing disparities in cancer care: The role of multidisciplinary teams in Malaysia

Arnil Sirimanne

Department of Oncology, Prince Court Medical Centre, 50450, Kuala Lumpur, Malaysia

Track: Allied Health
Theme: Treatment

ABSTRACT

Cancer care in Malaysia faces significant disparities driven by socioeconomic status, geography, cultural beliefs, and access to timely services. Many patients are diagnosed at advanced stages of breast, colorectal, and lung cancers due to low health literacy, financial barriers, and fragmented care. This presentation explores how Multidisciplinary Teams (MDTs) can address these challenges. MDTs—comprising specialists such as oncologists, surgeons, radiologists, pathologists, nurses, and allied health professionals—offer coordinated, evidence-based care. Studies show they improve survival, speed up treatment, and enhance diagnostic accuracy. Patients benefit from clearer communication and better overall support. However, MDTs are not yet widely adopted in Malaysia. Resource shortages, inconsistent protocols, and limited infrastructure—particularly in rural areas—hinder broader implementation. Urban hospitals are more likely to have functional MDTs, while rural centres often lack the staff and digital tools needed. National initiatives like the National Strategic Plan for Cancer Control Programme (NSPCCP) and the City Cancer Challenge in Greater Petaling are working to expand access through training, standardisation, and technology support. Strengthening MDT use is an important step toward improving equity and outcomes in Malaysian cancer care.

Keywords: Multidisciplinary teams (MDTs), cancer care disparities, Malaysia, access and equity, national cancer initiatives

Cancers in children and adolescents: Progress and challenges

Teh Kok Hoi

Paediatric Department, Hospital Tunku Azizah, 50300, Kuala Lumpur, Malaysia

Track: Allied Health
Treatment: Treatment

ABSTRACT

Paediatric Oncologists in Malaysia reported 705 children with cancer annually (2010 – 2012) compared to Malaysian National Cancer Registry with 583 children below 15 years (2007 – 2016), as reporting is not mandatory. Survival improved with time. In Sarawak, Precursor B-cell Acute Lymphoblastic Leukemia had improved survival with BFM95 (4yOS 88%) compared to UKALL (8yOS 81%). Acute Myeloid Leukemia did better with UK AML15 (5yOS 56%) compared to UK AML12 (10yOS 34%). In Hospital Tunku Azizah, Acute Promyelocytic Leukemia had excellent outcome using UK APML 2012 (10yOS 92%) compared to UK AML12 (5yOS 21%). Down Syndrome with Myeloid Leukemia did very well with MLDS 2007 (5yOS 94%) compared to DAT Protocol (2yOS 29%). Mature B-cell Lymphoma had excellent results with addition of Rituximab for Stage III (3yEFS 100% vs 60%) and reduction of intrathecal chemotherapy for Stage IV (2yOS 89% vs 33%). Hodgkins Lymphoma did excellently with EuroNet PHL-C1 (3yEFS 100%) compared to CCG5942 (3yEFS 74%). Relapse extracranial germ cell tumours had better salvage with CarboTIP (3yOS 67%) compared to ICE (3yOS 33%). High-risk Neuroblastoma faired better with addition of Dinutuximab Beta (3yOS 100% vs 58%). Ewing Sarcoma did better with AEWS0031 (2yOS 86%) compared to EiCESS92 (2yOS 60%). Advanced bilateral Retinoblastoma had better enucleation free survival and functional vision with SJCRH (4yEFS 44%) compared to JOE (4yEFS 12%). Excellent outcome was achieved with BEP for germ cell tumour of testis (5yOS 98%) and ovary (2yOS 91%). Wilms Tumour and non-Wilms renal tumours had excellent outcome (5yOS 91% and 88%) using COG regime. Challenges remained for patients with late presentation (50% Stage IV Osteosarcoma) and treatment refusal / abandonment (5%). Brain tumour survivors suffer long-term neurological and endocrine deficits. Care is not equally distributed across the country. Teenagers fall between the service gaps.

Keywords: Cancer, children, teenagers, improved survival, challenges

OP001

Investigating the mechanisms of action of anticancer drugs using novel proteomic techniques

Yasser Tabana[1], Lina Alhourani[2], Richard Fahiman[2], Khaled Barakat[1]

[1]Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta, Edmonton, T6G 2R3, Alberta, Canada, [2]Department of Biochemistry, University of Alberta, Edmonton, T6G 2R3, Alberta, Canada

Track: Research
Theme: Treatment

ABSTRACT

Introduction: Understanding the mechanisms of action of anticancer drugs is critical for improving therapeutic outcomes and developing next-generation treatments. Proteomics, the large-scale study of proteins and their functions, has emerged as a powerful tool in oncology research, providing insights into drug mechanisms, biomarker discovery, and resistance mechanisms **Purpose:** This study employs two advanced proteomic techniques to investigate the mechanisms of action of two anticancer agents: Compound B, a novel immunomodulatory drug, and Bortezomib, a first-generation proteasome inhibitor. **Materials and Methods:** The mechanism of action of Compound B was studied using pull-down assays and LC-MS analysis in T-cells to identify its immunological targets. Cytokine and chemokine levels were measured using ELISA and MSD V-plex kits to assess its immunostimulatory effects. For Bortezomib, metabolic labeling with unnatural amino acids, such as azidohomoalanine (AHA), was used for the first time to explore its effects on protein synthesis and degradation in multiple myeloma cells. **Results:** Compound B significantly increased the production of several immunostimulatory cytokines, including IL-13, IL-6, and IL-2. Proteomic analysis identified 21 significant proteins, with cyclin-dependent kinase 6 (CDK6) emerging as a potential target, consistent with its role in immunomodulatory pathways. For Bortezomib, proteomic analysis revealed significant upregulation of key neddylation enzymes, highlighting changes in protein dynamics, including synthesis and degradation. **Conclusion:** These findings provide new insights into the mechanisms of Compound B and Bortezomib, highlighting potential therapeutic targets and strategies to enhance cancer treatments.

Keywords: Immunotherapy, cancer treatment, proteomics, target identification, multiple myeloma

Associations of cardiometabolic multimorbidity with risks of lung cancer and competing mortality: A population-based prospective cohort study

Jiahao Lin[1], Yu Chen[1], Lan Wu[1], Wenkai Huang[2], Mengmeng Li[1]

[1]Department of Preventive Oncology, Sun Yat-sen University Cancer Centre, 510060, Guangzhou, China, [2]National Central Cancer Registry Office, National Cancer Centre, Chinese Academy of Medical Sciences and Peking Union Medical Collage, 100000, Beijing, China

Track: Research
Theme: Prevention

ABSTRACT

Introduction: Lung cancer is the most commonly diagnosed cancer worldwide. Screening has been found to reduce lung cancer mortality in randomized controlled trials. However, in real-world settings, there is a high prevalence of cardiometabolic multimorbidity (CMM), which may influence the balance between benefits and harms of lung cancer screening. We aimed to compare the impact of CMM on the risk of lung cancer against competing mortality. **Materials and Methods:** This study included 512,592 participants free of lung cancer at baseline from the China Kadoorie Biobank. CMM was defined as the coexistence of at least two cardiometabolic diseases, including hypertension, diabetes, coronary heart disease (CHD), and stroke. We applied multi-state models to simultaneously estimate hazard ratios (HRs) of CMM on lung cancer incidence and competing mortality, and the comparative HRs for competing mortality relative to lung cancer incidence. **Results:** With a median follow-up of 10.1 years, 4,606 participants were diagnosed with lung cancer, and 39,724 participants died of other causes. Overall, CMM was associated with an increased risk of transition from baseline to lung cancer incidence (HR: 1.11, 95%CI: 1.00-1.23), and from baseline to competing mortality (HR: 2.35, 95%CI: 2.29-2.41), with comparative HRs of 2.12. All CMM patterns increased the risk of competing mortality, with HRs ranging from 2.3 (hypertension & CHD) to 7.4 (four diseases co-exist). Participants with at least the combinations of hypertension & diabetes, hypertension & CHD, or CHD & stroke had higher risk of LC, with HRs varying from 1.2 to 2.8. The comparative HRs ranged from 1.6 (CHD & Stroke) to 5.1 (hypertension & diabetes & stroke). **Conclusion:** The risk of competing mortality associated with CMM was much higher than that of lung cancer. Personalized screening and nuanced communication are needed among patients with cardiometabolic multimorbidity.

Keywords: Lung cancer, competing mortality, cardiometabolic multimorbidity, prospective cohort

Sacred health: Aligning cancer prevention with islamic teachings in Malaysia's multicultural context

Zhenyu Zou

Faculty of Health Science, Semmelweis University, 1088, Budapest, Hungary

Track: Determinants of Health
Theme: Prevention

ABSTRACT

Introduction: Malaysian late-stage cancer diagnosis rate (60%) reflects systemic barriers rooted in cultural and religious beliefs. Muslim communities navigate dual Islamic principles: viewing illness as divine tests while embracing treatment-seeking as prophetic guidance. This study explores how aligning cancer prevention with Islamic teachings can transform cultural resistance into health-promoting strategies. **Materials and Methods:** A 10-year review (2013–2023) analyzed Islamic health texts, cancer prevention studies in Muslim communities, and Malaysian Shari'ah guidelines. A cultural comparison framework identified key themes through textual analysis, validated by cross-referencing rulings from Islamic authorities (e.g., Negeri Sembilan Shari'ah Council). **Results:** 1. Cultural barriers: - Screening is perceived as a challenge to Allah's plan, but this is countered by Qur'an 2:195 ("Do not destroy with your own hands"). - Reluctance to undergo gender-sensitive screening, especially among rural women. - Limited access to cancer prevention education in underserved areas. 2. Religious Affirmation: - The Shariah Council ruling links early screening to the protection of life- a principle of Islam. - The Malaysian Islamic Medical Council viewed the medical checkup as a sign of compliance with the Prophet. 3 Successful interventions: A pilot intervention with a group of Muslim women in mosques in the United States proved that nearly 40% of Muslim women received a mammogram within 12 months of the intervention. Discussion Integration Strategies: -Collaborate with clergy to develop cancer prevention promotional materials. - Train women's health counselors to address privacy barriers and conduct outreach in rural areas. - Embed screening activities into Ramadan sermons and shape early detection into "Hari Raya purification rituals" This approach centered on Malaysian Islamic teachings, demonstrates how cultural barriers themselves can be turned into tools for cancer prevention, thus providing a new paradigm for non-biomedical interventions in oncology prevention.

Keywords: Islamic teachings-health promotion alignment, religiously-empowered screening interventions, culturally-sensitive health communication, mosque-led community health initiatives, non-confrontational cancer prevention paradigms

Radioactive iodine treatment with adjunctive use of thyrotropin alfa in advanced differentiated thyroid carcinoma: Local experience

Ahmad Zaid Zainal

Nuclear Medicine Department, Hospital Kuala Lumpur, Jalan Pahang, 50586, Kuala Lumpur, Malaysia

Track: Medical Professionals
Theme: Treatment

ABSTRACT

Introduction: Thyrotropin alfa is primarily used to prepare non-metastatic differentiated thyroid carcinoma (DTC) for radioactive remnant ablation, diagnostic whole-body scan (WBS), or stimulated serum thyroglobulin (Tg) assessment. Conventionally patients are advised to withhold oral thyroxine to induce hypothyroid state prior to these procedures. Nevertheless, limited data are available on adjunctive use of thyrotropin alfa in high-dose radioactive iodine (RAI) treatment for advanced DTC. We aimed to evaluate local practice of this adjunctive administration. **Materials and Methods:** Case series of metastatic DTC patients who received adjunctive thyrotropin alfa for high-dose RAI >80 millicurie in our institution (2017-2018) and attended subsequent clinic monitoring. Positive anti-Tg cases and patients who defaulted on management or follow-up were excluded. In total, 12 cases were included. Besides safety profile of thyrotropin alfa, clinical parameters including thyroid stimulating hormone (TSH), serum Tg levels at 6-12 months post-treatment, and disease status with a minimum of 3 years follow-up were compiled. **Results:** Mean age was 62 years. Equal distribution of males and females. Majority had follicular thyroid cancer with comorbidities (n=8). No major medication side effects were reported. All patients had adequate TSH increase following thyrotropin alfa injection. Pre-treatment Tg levels were significantly elevated (>100 ng/ml) in 10 cases. Most patients had positive post-treatment WBS (n=11). Further RAI treatment was planned for most patients (n=11), and oncology referrals were also made (n=7). Mean Tg level at 6-12 months after radioiodine therapy was lower than baseline but not statistically significant (269.1 vs. 578.3 ng/ml, p=0.319). On follow-up, only 2 patients showed remission or stable small volume disease. **Conclusion:** In our small cohort of advanced DTC patients, adjunctive thyrotropin alfa has been well-tolerated with no major side effects and spared them from hypothyroidism. Despite some reduction in post-RAI serum Tg, minority had remission or stable small volume disease.

Keywords: Thyroid carcinoma, thyrotropin alfa, radioactive iodine

When love demands more: Cultural pressures behind aggressive end-of-life chemotherapy in Malaysia

Sri Kisha Subramaniam

Department of Clinical Oncology, Universiti Malaya, 50603, Kuala Lumpur, Malaysia

Track: Determinants of Health
Theme: Survivorship

ABSTRACT

End-of-life (EoL) treatment decisions have become increasingly complex with the advent of more tolerable chemotherapeutic agents and higher public expectations. While best supportive care (BSC) remains a valid approach, systemic chemotherapy is often extended late into the disease trajectory, raising concerns about its impact on quality of life (QoL), healthcare costs, and appropriate resource allocation. The justification for administering chemotherapy near the end of life remains contentious, especially as newer agents make such interventions appear less toxic, though not necessarily more beneficial. This retrospective study analyzed 169 oncology patients who passed away in the Oncology Ward at Hospital Universiti Kebangsaan Malaysia over 2 years. Patient demographics, tumor profiles, treatment details, and the timing of the last chemotherapy dose relative to death were examined. Factors potentially influencing decisions to administer palliative chemotherapy at the EoL were assessed. The results showed that out of 169 patients, 26% received chemotherapy in the last 14 days of life, and 40.2% within the last 30 days. There was no significant correlation between tumor characteristics or most demographics and the receipt of late-stage chemotherapy. However, older age and poorer ECOG performance status were associated with reduced likelihood of receiving chemotherapy within 30 days of death. In Conclusion, despite international benchmarks discouraging chemotherapy administration close to death, the Malaysian cohort showed a higher prevalence of such practices. Beyond clinical indicators, cultural dynamics may be at play—particularly the concept of filial piety, which is deeply rooted in many ASEAN societies. The desire of family members, especially children, to pursue "everything possible" for their loved ones may place implicit pressure on oncologists to continue treatment. This suggests that aggressive EoL care in Malaysia may not only be medically driven but also socially influenced. Future guidelines should consider the cultural context in shaping end-of-life care policies and communication strategies between

Keywords: End-of-Life Care, Palliative Chemotherapy, Filial Piety, Cultural Influence, Malaysia, Aggressive Cancer Treatment

Challenges and mHealth app support needs of patients with haematological cancers in self-managing oral systemic anticancer therapy: A qualitative study exploring stakeholders' perspectives

Lena Mahalingam[1], Tan Bee Kim[1], Ping Chong Bee[2], Chee Hooi Teoh[3], Renukha Sellappans[1], Lei Wee Hum[4], Diana Leh Ching Ng[2], Azlan Hussin[5], Sen Mui Tan[6], Li-Chia Chen[7]

[1]School of Pharmacy, Faculty of Health and Medicine Science, Taylor's University, 47500, Subang Jaya, Selangor, Malaysia, [2]Department of Medicine, University of Malaya, Faculty of Medicine, 50603, Kuala Lumpur, Malaysia, [3]School of Computer Science, Taylor's University, Faculty of Innovation and Technology, 47500, Subang Jaya, Selangor, Malaysia, [4]School of Medicine, Taylor's University, Faculty of Health and Medical Sciences, 47500, Subang Jaya, Selangor, Malaysia, [5]Department of Internal Medicine, Universiti Sains Malaysia, School of Medical Sciences, 16150, Kubang Kerian, Kelantan, Malaysia, [6]Department of Haematology, , Hospital Ampang, 68000, Ampang, Selangor, Malaysia, [7]Centre for Pharmacoepidemiology and Drug Safety, Division of Pharmacy and Optometry, School of Health Sciences, Faculty of Biology, University of Manchester, Faculty of Biology, Medicine and Health, Manchester, M13 9PT, United Kingdom

Track: Research
Theme: Treatment

ABSTRACT

Introduction: Inadequately managed side effects and suboptimal adherence to oral systemic anticancer therapy (SACT) are associated with treatment resistance and reduced survival outcomes in patients with haematological cancers (HCs). With cancer centres located in major cities, patients encounter long travel distances, which often impedes access to clinical services. Aims: This study aimed to explore the challenges with oral SACT and the support needs for remote self-management using mobile health (mHealth) application, from the perspectives of patients, caregivers, and healthcare professionals in Malaysia. **Materials and Methods:** We conducted 30 semi-structured interviews involving 20 patients with HCs and 10 caregivers, as well as four focus group discussions with 14 haematologists and eight pharmacists, from August 2024 to April 2025. Participants were purposively sampled from four hospitals in Malaysia to ensure demographic diversity. The topic guide was developed based on the oral SACT self-management framework by Mason et al. and the Technology Acceptance Model (TAM). All interviews were audio-recorded, transcribed verbatim, and thematically analysed using a deductive approach by two independent researchers until data saturation. **Results:** Participants identified eleven challenges related to capability (poor health literacy, lack self-efficacy, difficulties with medication tracking, dietary concerns, religious influences), opportunity (non-adherence due to disrupted routine, complex and costly regimen, unreliable online resources), and motivation (emotional distress, limited clinical contact, denial of diagnosis) in patients' self-management of oral SACT, resonating with COM-B model. Guided by TAM, five mHealth design components perceived as beneficial include access to verified information, progress visualisation, peer/provider engagement, adherence tracking, and symptom triage tools. Four perceived ease-of-use features were straightforward, engaging content, digital literacy support with multilingual interfaces, data privacy, and reliable connectivity. **Conclusion:** This study offers critical insights into behavioural and contextual factors that will inform the design of mHealth interventions to effectively support self-management of oral SACT among patients with HCs in Malaysia.

Keywords: Haematological cancers, oral systemic anticancer therapy, self-management, qualitative study, mhealth

Demographic profile of risk assessment module users in the BruHealth app for colorectal cancer screening in Brunei Darussalam

Nur Maajidah Haji Abdul Rahman

Department of Environmental Sciences, Ministry of Health, Brunei-Muara, 2515, Bandar Seri Begawan, Brunei

Track: Research
Theme: Screening and Diagnosis

ABSTRACT

Introduction: Colorectal cancer (CRC) is the most commonly diagnosed cancer among men and the second most common among women in Brunei Darussalam. The Colorectal Cancer Screening Programme was introduced by the Ministry of Health in 2019 with the aim to enable early detection and prevention of colorectal cancer. As an initiative to improve the screening uptake, the programme was incorporated into the national mobile health app, BruHealth, through the Risk Assessment (RA) module in July 2023. This allows individuals to determine their screening eligibility, and conveniently book screening appointments through the app. Aim: This study aims to describe the demographic characteristics of users who completed their CRC screening via the RA module. **Materials and Methods:** A cross-sectional descriptive analysis was conducted using data from the BruHealth User Workstation. The analysis included demographic variables such as age, gender, and district of residence of the users who completed their CRC screening through the app from August 2024 to February 2025. **Results:** A total of 1,771 users completed their screening via the app during the study period. Of these, 50.8% were female and 49.2% were male. The majority of users were aged 50–54 (37.4%), followed by those aged 55–59 (29.9%), 60–64 years (18.4%), 65-69 years (9.3%), and 70-74 years (4.5%). In terms of geographical distribution, most users resided in Brunei-Muara district (71.6%), followed by Belait (19.5%), Tutong (8.1%), and Temburong (0.9%). **Conclusion:** The findings suggest that the CRC Risk Assessment Module is primarily utilised by individuals aged 50–59 years, who constitute 49.7% of the eligible population for the CRC screening. Participation was predominantly from Brunei-Muara district, where more than 70% of the population resides. This study provides critical baseline data on the users engaging with the RA module and will inform future health promotion strategies especially targeting those with lower engagement.

Keywords: colorectal cancer, bruhealth, risk assessment module, health screening

The role of digital health in enhancing the reast cancer screening programme in Brunei Darussalam

Norazwani Ishak

Department of Environmental Sciences, Ministry of Health, Brunei-Muara, 2515, Bandar Seri Begawan, Brunei

Track: Medical Professionals
Theme: Screening and Diagnosis

ABSTRACT

Introduction: Breast cancer is the most common cancer among women in Brunei Darussalam. The Breast Cancer Screening Programme was introduced nationwide in November 2019, initially requiring eligible individuals to either call or visit the health centres to make an appointment. This conventional method posed challenges in terms of accessibility and convenience to book screening appointment. In August 2024, the screening programme was integrated into the national mobile health app, BruHealth, allowing eligible individuals to book their appointments digitally. Aims The study aims to evaluate the shift in breast cancer screening uptake from conventional methods to the BruHealth app. **Materials and Methods:** A descriptive analysis was conducted using the health screening data from September 2024 to February 2025. The analysis compared monthly screening uptake via both conventional method and the BruHealth app to assess the shift towards digital health screening. **Results:** Over a six-month period following the integration of the breast cancer screening programme into BruHealth, the uptake via the app increased from 22.1% in September 2024 to 70.8% in February 2025, reflecting a significant shift from the conventional method. Engagement through the BruHealth app started to increase in October 2024 with 53.8%, followed by 61.4% in November and 67.3% in December. The peak engagement occurred in January 2025, with 81.3% of screenings booked through the app, before slightly dropping to 70.8% in February 2025. **Conclusion:** The analysis shows an obvious shift from the conventional screening method to digital health screening. These results highlight promising public acceptance and engagement with digital health tools. Given the steady increase in the screening uptake via the BruHealth app, future initiatives will focus on enhancing digital health engagement to boost participation in the screening programme.

Keywords: Screening, breast cancer, digital health

A case report on pericardial effusion secondary to medullary thyroid carcinoma: An uncommon occurrence

Nithya Devi Kandasami

Breast and Endocrine Uni, Hospital Queen Elizabeth II, Department of Surgery, 88300, Kota Kinabalu, Sabah, Malaysia

Track: Medical Professionals
Theme: Treatment

ABSTRACT

Medullary thyroid carcinoma (MTC) is a rare and aggressive form of thyroid cancer originating from the parafollicular cells (C-cells) of the thyroid gland. Unlike other types of thyroid cancer, MTC can produce hormones such as calcitonin and carcinoembryonic antigen (CEA), which serve as valuable markers for diagnosis and monitoring. MTC commonly metastasizes to regional lymph nodes; however, distant metastases to organs such as the liver, lungs, and bones are also observed. Cardiac metastasis is exceedingly rare and poses significant diagnostic and therapeutic challenges. Herein, we present a case involving a male patient who exhibited cardiac-related symptoms, eventually leading to a diagnosis of global pericardial effusion with cardiac tamponade. During evaluation, the patient was incidentally found to have co-existing MTC as evidenced by various radiological, biochemical, histological, and cytological analyses. Pericardial tapping provided symptomatic relief, and cytological examination confirmed metastasis originating from MTC. This case highlights the rare occurrence of MTC metastasizing to the pericardium, emphasizing the necessity for comprehensive imaging and multidisciplinary management in such presentations.

Keywords: medullary thyroid carcinoma, MTC, thyroid, metastasis, cardiac metastasis

Clinical insights and management strategies in medullary thyroid carcinoma in East Malaysia, Sabah: A case series

Nithya Devi Kandasami

Breast and Endocrine Uni, Hospital Queen Elizabeth II, Department of Surgery, 88300, Kota Kinabalu, Sabah, Malaysia

Track: Medical Professionals
Theme: Screening and Diagnosis

ABSTRACT

Introduction: Medullary thyroid carcinoma (MTC) is a rare form of thyroid cancer and often presents with a different clinical and molecular profile. MTC can occur sporadically or as part of inherited syndromes such as Multiple Endocrine Neoplasia type 2 (MEN2). Herein, we present a case series of MTC in East Malaysia, Sabah. Objective: This study aims to explore the current cohort of MTC in Sabah in terms of disease extension, diagnostic evaluation and management. **Materials and Methods:** This was a retrospective case series study in the period of March 2023 to March 2025. Sociodemographic and clinical data were collected from the patient's clinical records in Hospital Queen Elizabeth II, Sabah, Malaysia. **Results:** The study included 7 patients with anterior neck swelling and elevated calcitonin and CEA levels. The cohort comprised predominantly six females and one male, aged 20 to 64, all diagnosed with sporadic MTC. Five patients underwent total thyroidectomy with neck dissection; one patient is due completion thyroidectomy, and one male patient did not undergo surgery due to extensive disease. Subsequently, two patients had further RET genetic testing. Due to persistent CEA elevation post-surgery, one patient required a redo modified radical neck dissection. **Conclusion:** Management of MTC depends on early diagnosis through calcitonin screening, genetic testing, and tailored therapy.

Keywords: medullary thyroid carcinoma, thyroid carcinoma, calcitonin, Sabah Malaysia

Curative surgical and adjuvant management of metastatic follicular thyroid carcinoma: Reflections on multidisciplinary decision-making in complex disease

Muhammad Safwan Abdullah, Shahrun Niza Abdullah Suhaimi, Adi Syazni Muhammad, Abdul Fattah Abdul Hamid

Department of Surgery, Faculty of Medicine, Universiti Teknologi MARA, Sungai Buloh Campus, Jalan Hospital, 47000, Sungai Buloh, Selangor, Malaysia

Track: Medical Professionals
Theme: Treatment

ABSTRACT

Introduction: Follicular thyroid carcinoma (FTC) is a differentiated malignancy with potential for vascular invasion and distant metastases. Although uncommon, some patients present with extensive local invasion alongside systemic spread. In younger patients, even with metastases, treatment intent remains curative. Managing such complex disease requires coordinated multidisciplinary input to balance oncological control and functional preservation. Aims To highlight the role of multidisciplinary team (MDT) coordination in the curative management of advanced FTC and explore integration of targeted therapy in resource-limited healthcare settings. **Materials and Methods:** A 49-year-old woman with metastatic FTC (T4aN1bM1) and active systemic lupus erythematosus presented with progressive compressive symptoms and a large neck mass. MDT planning involved endocrine surgery, otolaryngology, cardiothoracic and plastic surgery, anaesthetics, rheumatology, nuclear medicine, and interventional radiology. Management began with selective thyroid artery embolisation and elective airway protection. She underwent total thyroidectomy, tracheal reconstruction, manubriectomy with bilateral rib resection, chest wall plating, and pectoralis major flap reconstruction. Post-operatively, she received external beam radiotherapy to the sacral bone and radioactive iodine ablation (I-131, 150 mCi). **Results:** Post-ablation whole-body scanning revealed both iodine-avid (neck, mediastinal, pulmonary, hepatic) and non-avid metastases (lung, liver, sacrum). The patient experienced a stormy post-operative course, including surgical site infection and respiratory complications, but recovered with good functional outcome. A PET-CT is planned for disease surveillance to assess treatment response and guide further management. While repeat RAI remains under consideration, the presence of non-avid lesions necessitates evaluation for tyrosine kinase inhibitors (TKIs). In Malaysia, access to TKIs such as Lenvatinib and Sorafenib is limited by cost and institutional access, reinforcing the need for timely surgery and strategic therapy use. **Conclusion:** This case highlights the value of early MDT coordination in curative management of advanced FTC. A multimodal approach enables effective resection, supports adjuvant therapy, and prepares for targeted interventions in selected patients with metastases.

Keywords: Follicular thyroid carcinoma, multidisciplinary team (MDT), distant metastasis

Glutamine supplementation in tongue cancer: Alleviating treatment-related side effects through nutritional support – A case study

Chong Jia Jun

Dietetic Unit, Pantai Hospital Kuala Lumpur, Jalan Bukit Pantai, 59100, Kuala Lumpur, Malaysia

Track: Allied Health
Theme: Treatment

ABSTRACT

Introduction: Malnutrition is common among tongue cancer patients who undergoing chemoradiotherapy, with prevalence of about 50% in Malaysia. A significant impaired oral intake due to pain, dysphagia, and mucositis leads to malnutrition and higher mortality. Adequate nutritional support is critical to improving treatment tolerance, clinical outcomes, and quality of life. **Case:** A 72-years-old male patient was diagnosed with squamous cell carcinoma of the tongue (P16+). He was scheduled for 6 weeks of chemoradiotherapy and had already experienced 5% weight loss 3 months prior to the treatment. During this period, he experienced some fatigue and mild dysphagia, which led to his energy and protein intake falling below 60% of the estimated requirement for over a month. Intervention: A glutamine supplement (10 g twice a day) was recommended to assist in mucosal healing and potentially reduce radiation-induced mucositis. Estimated energy needs were 30–35 kcal/kg/day and protein requirement at 1.2–1.5 g/kg/day. A high calorie and protein nutrition plan was implemented, incorporating oral nutrition supplements and a soft texture diet. Frequent small meals and a taste modified diet were emphasized to improve oral intake. **Outcomes:** Over six weeks of chemoradiotherapy, fatigue was reduced, and mucositis remained manageable (grade I) with glutamine. The patient met 80–85% of nutritional needs orally with weekly follow-ups and showed good compliance with oral nutrition supplements, unlike the 64% non-compliance in other studies. Importantly, treatment proceeded without interruption, compared to the ~10% interruption rate reported attributed to treatment-related side effects. **Conclusion:** This case highlights the pivotal role of early nutritional intervention and glutamine supplementation in managing the metabolic stress and side effects of chemoradiotherapy in tongue cancer. Individualized nutritional support with adequate calorie and protein intake, and continuous monitoring improve nutritional status and enhance treatment adherence. These findings also reinforce the essential role of dietitians.

Keywords: Glutamine, Chemoradiotherapy, Energy, Protein, Nutrition Support

Evaluating the clinical impact of omitting routine intraoperative frozen section during sentinel lymph node biopsy in early breast cancer

Gillian Caunter, Abdul Fattah Abdul Hamid, Adi Syazni Muhammed, Shahrun Niza Abdullah Suhaimi

Department of Surgery, Faculty of Medicine, Universiti Kebangsaan Malaysia, 50300, Kuala Lumpur, Malaysia

Track: Research
Theme: Treatment

ABSTRACT

Introduction: Sentinel lymph node biopsy (SLNB) is the standard for staging axillary lymph nodes in early breast cancer with clinically and radiologically negative nodes. Previously, intraoperative frozen section (iFS) helped to avoid a deferred axillary dissection (AD) in node-positive cases. However, over the last decade, evolving evidence has led to a global decline in AD rates. Aim This study aimed to assess whether routine use of iFS remains necessary. The secondary objective was to evaluate whether omitting AD in patients with 1–2 positive sentinel nodes impacts overall or disease-free survival. **Materials and Methods:** We conducted a retrospective review at Universiti Kebangsaan Malaysia, identifying patients who underwent SLNB for early breast cancer over a 10-year period. Patients with iFS and positive nodes underwent immediate AD. In those without iFS, patients with T1–T2 tumors and 1–2 positive nodes received adjuvant radiotherapy without AD. **Results:** A total of 331 patients underwent SLNB, with an average of three lymph nodes harvested. iFS was performed in 97 patients (30%). The false negative rate for iFS was 6%, with half of the cases due to micrometastases. Performing iFS prolonged surgery by an average of 37 minutes. Only 16 patients (4.8%) benefited from iFS by avoiding a deferred axillary dissection. After a median follow-up of 72 months (6 years), overall survival rates at three and five years were 95% and 93%, respectively; disease-free survival rates were 93.65% and 90.33%. These outcomes were higher than the national average. Local recurrence rates were low, at 2.4% and 3% at three and five years. **Conclusion:** Routine iFS during SLNB for early breast cancer is unnecessary and should be reserved for selected cases. Omitting AD in patients with 1–2 positive sentinel nodes does not adversely affect oncological outcomes.

Keywords: Sentinel lymph node biopsy, axillary dissection, early breast cancer, survival and recurrence rates, intraoperative frozen section

Cytotoxicity and mechanistic divergence of tocotrienol-rich fraction in TMZ-resistant GBM cells

Dionne Leong, Ammu Radhakrishnan, Saatheeyavaane Bhuvanendra, Wai Leng Lee

Jeffrey Cheah School of Medicine and Health Sciences, Monash University Malaysia, Bandar Sunway, 47500, Selangor, Malaysia

Track: Research
Theme: Treatment

ABSTRACT

Glioblastoma multiforme (GBM) is a highly aggressive brain malignancy with poor prognosis and resistance to standard chemotherapeutics, particularly temozolomide (TMZ). Despite its limited efficacy, TMZ remains the first-line treatment due to its ability to cross the blood–brain barrier. Vitamin E, a group of lipid-soluble analogues comprising tocopherols (Toc) and tocotrienols (T3), has demonstrated emerging anticancer potential and similarly possesses the ability to penetrate the blood–brain barrier, making it a promising alternative for GBM therapy. To investigate this potential, the TMZ-resistant T98G human glioblastoma cell line was used to assess the effects of vitamin E constituents, including α-tocopherol (α- Toc), α-tocotrienol (α-T3), and tocotrienol-rich fraction (TRF), a mixture of vitamin E analogues. While α-Toc is the most widely studied form of vitamin E, it had no impact on cell viability. Instead, TRF and α-T3 significantly reduced viability with cytotoxic effects surpassing TMZ. These results suggest that the anticancer effects of TRF are driven predominantly by its T3 components. Furthermore, transcriptomic analysis revealed that TRF activates molecular pathways distinct from those of TMZ, indicating a fundamentally different mechanism of action. Together, these findings position TRF as a compelling alternative to TMZ in the treatment of resistant GBM.

Keywords: Glioblastoma multiforme, vitamin e, temozolomide, chemoresistance, anti-cancer

Challenges in managing life-threatening obstructed thyroid cancer: 7-year HPRZ II experience

Abdul Hadi Anuar, Imi Sairi Abdul Hadi

Department of Surgery, Hospital Raja Perempuan Zainab II, 15588, Kota Bharu, Kelantan, Malaysia

Track: Medical Professionals
Theme: Treatment

ABSTRACT

Management of thyroid malignancies that present with acute airway obstruction remains challenging due to its complexity. The role of surgery for these aggressive tumours is debatable and should be tailored to the clinical-pathological characteristics and patient factors. We are reporting our experience in managing this complex clinical condition. This retrospective observational study looked into all thyroid malignancies that presented with acute airway obstruction in Hospital Raja Perempuan Zainab II between 2018 and 2024. Inclusion criteria include all cases either treated with emergency thyroidectomy or treated non-operatively. This study aims to review our centre's experience in these clinical conditions, focusing on demographics, clinical-pathological profile, management, and outcomes. There were 27 patients identified. There was a similar gender distribution, with the median age of 46 years. Most patients presented with long-standing goitres, having experienced these for a median duration of 82 months before developing airway obstruction. There were 12 (45%) patients had vocal cord abnormality upon presentation, and 3 (11%) required urgent intubation to secure the airway. The most common malignancy was differentiated thyroid cancer, followed by anaplastic thyroid carcinoma. Emergency thyroidectomy was performed in 14 patients with well-differentiated thyroid cancer who were deemed suitable for surgery, though it carried a high rate of morbidity (50%) and mortality (28%). There were cases of anaplastic thyroid carcinoma that were treated without surgery, with 83% having a poor survival of less than 3 months. The findings of this study highlight the challenges and the high-risk nature of managing these conditions. The role of surgery should be tailored to the specific tumor characteristics, patient factors, and availability of technical surgical expertise.

Keywords: Obstructed thyroid cancer, airway obstruction, locally advanced thyroid cancer, well differentiated thyroid cancer, anaplastic thyroid cancer

Role of elastin nanogel-encapsulated decursin/enzalutamide for castration-resistance prostate cancer therapy (CRPC)

Vinoth Kumar Lakshmanan

Faculty of Clinical Research, Sri Ramachandra Institute of Higher Education and Research, Sri Ramachandra Nagar, Porur, 600116, Chennai, India

Track: Research
Theme: Treatment

ABSTRACT

Introduction: Prostate cancer (PC) is the most common cancer affecting men and the third leading cause of cancer death. Despite recent advances in detection and localized curative treatment for prostate cancer, 23-40% of those patients will go on to develop metastatic disease. Castration-Resistant Prostate Cancer (CRPC) arises when hormone –refractory growth occurs in a castrate androgen level environment. The androgen receptor (AR) has emerged as important target for therapy for metastatic prostate cancer. Current management of CRPC approved drugs includes Enzalutamide, Docetaxel, Abiraterone acetate and Cabazitaxel. Most of the medications given oral results in low bioavailability, low aqueous solubility, poor permeability, rapid clearance, drug resistance and low concentration at the absorption surface. **Materials and Methods:** In view of this limitation, we developed an injectable elastin nanogels for efficient drug delivery system using inverse-mini emulsion technique and characterized by SEM, FTIR, NMR, drug release to overcome CRPC is enabling survival benefit and prevention via targeted pathway specific therapies. Unique advantages of our elastin nanogels is a natural protein biopolymers which has a potential application for biomedical purpose with biocompatibility, bioactivity, and is non-toxic, non inflammatory, and non immunogenicity which can be exploited in CRPC. **Results:** Our elastin based drug delivery showed no toxicity in Zebrafish embryos and longer circulation times and a better chances of targeting the tumor site and may increase passive accumulations in the mouse prostate xenograft model. **Conclusion:** Our elastin nano gel expected to be low cost injectable drug delivery system and better than DC beads is a drug delivery embolisation system that used to load anticancer drugs.

Keywords: Nanomedicines, drug delivery, prostate cancer, castration resistance, therapy

A rare case of a locally advanced chest wall squamous cell carcinoma with papillary thyroid carcinoma

Husna Harun[1], Raflis Ruzairee Awang[2], Nor Azham Hakim Darail[2], Nur Aziah Adib Anuar[2]

[1]Department of Surgery, Hospital Raja Perempuan Zainab II, 15588, Kota Bharu, Kelantan, Malaysia, [2]Breast and Endocrine Unit, Surgical Department, HKL

Track: Medical Professionals
Theme: Treatment

ABSTRACT

Introduction: Coexistence of different malignancies in an individual is a rare occurrence, and the association between a locally advanced squamous cell carcinoma (SCC) and papillary thyroid carcinoma (PTC) is outstandingly uncommon. We present a rare dual malignancy case, a locally advanced chest wall squamous cell carcinoma (SCC) and papillary thyroid carcinoma (PTC), highlighting the diagnostic and surgical challenges. **Case report:** A 62-year-old gentleman presented with a 2-month history of a rapidly growing anterior chest wall mass which was later confirmed to be a squamous cell carcinoma. CT scan revealed a huge chest wall mass extending from the level of C6 to T5 infiltrating the sternocleidomastoid (SCM), pectoralis, infrahyoid muscles and right thyroid lobe. There was presence of bilateral axillary and right cervical lymphadenopathy. He underwent an en-bloc resection of a chest wall SCC together with bilateral sternoclavicular joint excision and manubriectomy followed by a total thyroidectomy with right modified radical neck dissection (MRND) and bilateral axillary clearance. The huge chest wall defect was closed with an anterolateral thigh (ALT) free flap. The histopathological reports confirmed a well differentiated SCC (T3, N0, M0) with clear resection margin and multifocal PTC (T1b, N0, M0). The post-operative recovery was uneventful. No subsequent adjuvant therapy was needed and he continued follow up in primary care. **Conclusion:** The occurrence of SCC alongside PTC is an extremely rare phenomenon. A multidisciplinary approach is essential to formulate an individualized treatment plan. In this case a complete en-bloc resection of the locally advanced SCC and total thyroidectomy present curative intent.

Keywords: Papillary, thyroid, squamous, rare, carcinoma

Assessing functional ageing: Physical fitness profiles of breast cancer survivors versus cancer-free control women

Nur Afifah Mursyida

Faculty of Health Sciences, Universiti Kebangsaan Malaysia, 50300, Kuala Lumpur, Malaysia

Track: Determinants of Health
Theme: Screening and Diagnosis

ABSTRACT

Introduction: The Southeast Asia Region faces more than 2.3 million cancer diagnoses and 1.4 million cancer-related deaths each year, according to the WHO. Much of this burden can be overcome through prevention, early diagnosis, and timely linkage to treatment; however, a constellation of geographic- and resource-related barriers constrain delivery of best-practice care. Project ECHO aims to improve these circumstances by supporting providers with an evidence-based model for multidisciplinary, guided practice mentorship and support. **Materials and Methods:** Beginning in 2023, Project ECHO and partners throughout Malaysia, Indonesia, Vietnam, and India deployed the ECHO Model to strengthen the skills and capacity of local health care workers in cancer prevention, diagnosis, treatment, survivorship, and palliative care. In these virtual, collaborative learning environments, experts from major cancer care centers engage in continuous telementoring with local health care workers. Zoom video conferencing, the iECHO virtual learning platform, and a central data repository were used to implement and evaluate this initiative. **Results:** Thirty-nine hubs in the targeted countries implemented 102 Cancer ECHO programs. These programs spanned the full cancer care continuum and engaged 66,129 participants across diverse cadres of the health care workforce. Globally, over 200 organizations across 36 countries have implemented more than 800 ECHO programs to improve local cancer care delivery. This scale is accompanied by growing evidence of Cancer ECHOs' efficacy, with over 130 related, peer-reviewed publications thus far. Studies highlight a range of impacts on provider knowledge, confidence, and performance, including statistically significant knowledge gains in topics such as HPV vaccination, tobacco cessation, and oral cancer screening. **Conclusion:** The ECHO Model effectively supports contextualized implementation of best-practice care and builds the capacity of healthcare providers, particularly in underserved populations. Its ability to facilitate knowledge exchange can reduce barriers to cancer care delivery and improve patients' lives at massive scale across Southeast Asia and beyond.

Keywords: Training, mentoring, capacity development, health system strengthening, southeast asia

Cross-modal explainable AI for melanoma diagnosis

Junwen Zheng[1], Xinran Xu[2], Xiuyi Fan[3], Chang Cai[3]

[1]College of Information and Intelligence Engineering, Zhejiang Wanli University, 315100, Ningbo, Zhejiang, China, [2]College of Computing and Data Science, Nanyang Technological University 639798, Singapore, Singapore, Singapore, [3]Lee Kong Chian School of Medicine, Nanyang Technological University, 639798, Singapore, Singapore, Singapore

Track: Research
Theme: Screening and Diagnosis

ABSTRACT

The opacity of current deep learning-based melanoma classification systems remains a critical barrier to clinical adoption, despite their diagnostic accuracy approaching expert levels. To address this trust gap, we propose an interpretable framework that integrates multimodal clinical reasoning with explainable artificial intelligence (XAI) techniques. Our approach introduces a dual-stage segmentation pipeline that combines UltraLight-VM-UNet pseudolabel generation with SAM2's boundary-aware segmentation. From these segmentations, we extract three clinically validated dermoscopic features—"Asymmetry," "Border," and "Color"—aligned with the "ABCDE" rule commonly used in melanoma diagnosis. A cross-modal contrastive learning architecture then fuses VIT-derived image embeddings with the extracted clinical features, enhancing interpretability by aligning visual patterns with established biomarkers. To further support clinician understanding, we incorporate a hybrid explanation system that leverages CLIP-mediated medical concept activation and large language models (LLMs) to generate interpretable diagnostic reports. Trained and evaluated on the ISIC 2018 and 2020 datasets, our cross-modal XAI framework achieves expert-level diagnostic accuracy (92.30%, AUC 0.9689) while significantly improving clinician trust through transparent decision pathways. Our results demonstrate that multimodal explainability can be effectively integrated into melanoma classification without compromising diagnostic rigor, outperforming traditional black-box AI systems.

Keywords: Melanoma classification, explainable AI (XAI), dual-stage segmentation, contrastive learning, clinician trust

A supraclavicular flap: A second chance for recurrent thyroid carcinoma

Husna Harun[1], Raflis Ruzairee Awang[2], Nor Azham Hakim Darail[2], Nur Aziah Adib Anuar[2]

[1]Department of Surgery, Hospital Raja Perempuan Zainab II, 15588, Kota Bharu, Kelantan, Malaysia, [2]Surgical Department, Breast and Endocrine Unit, Hospital Kuala Lumpur, 50300, Kuala Lumpur, Malaysia

Track: Medical Professionals
Theme: Treatment

ABSTRACT

Introduction: Recurrent thyroid carcinoma with local tissue infiltration poses significant challenges in treatment, often requiring a multidisciplinary approach for effective management. Commonly, these cases necessitate extensive surgical resection and occasionally, a local flap, such as, a supraclavicular or pectoralis major flap is required for wound coverage. Here, we share our experience of harvesting a supraclavicular flap in managing a case of recurrent thyroid carcinoma. **Materials and Methods:** A 75-year-old woman who underwent total thyroidectomy followed by several courses of radioactive iodine (RAI) 20 years ago for a follicular thyroid carcinoma, presented with a fungating anterior neck mass. A computed tomography (CT) scan revealed an ill-defined soft tissue mass measuring 4 x 4 cm, extending through the skin anteriorly and infiltrating the right sternocleidomastoid muscle laterally and the cricoid cartilage posteriorly. Tissue biopsy confirmed recurrent follicular thyroid carcinoma. A wide local excision with left supraclavicular flap was performed. The procedure involved identifying the supraclavicular vessels using a handheld-doppler and drawing an elliptical skin island at the left supraclavicular region. The flap was elevated by dissecting from distal-to-proximal in a subfascial plane over the deltoid muscle and clavicle. Subsequently, the flap was rotated medially and delivered through a tunnel to the wound defect. The defect was then closed by using the flap. The donor site was closed primarily. **Results:** The flap uptake was 100% without any area of necrosis. The left upper arm range of movement was normal. The histopathological report confirmed recurrent follicular thyroid carcinoma. **Conclusion:** Supraclavicular flap is a reliable and versatile fascio-cutaneous flap for covering a neck wound defect following radical surgery for recurrent thyroid carcinoma.

Keywords: Flap, thyroid, advanced, papillary, surgery

Paediatric graves' disease complicated by papillary thyroid carcinoma: A Malaysian experience

Arvind Navaneethkumar Viswanathan, Raflis Ruzairee Awang

Department of Surgery, Breast and Endocrine Unit, Hospital Kuala Lumpur, 50586, Kuala Lumpur, Malaysia

Track: Medical Professionals
Theme: Treatment

ABSTRACT

Introduction: Graves' disease (GD) is an uncommon condition in the paediatric population, with an incidence of 0.1 to 3 cases per 100,000. The coexistence of GD and papillary thyroid carcinoma (PTC) is even rarer, with a reported incidence of approximately 5% in recent literature. However till date, no local Malaysian data are available. We present a case highlighting the clinical features, management, and outcomes of paediatric GD complicated by PTC, supported by a literature review. Case Presentation A 12-year-old female with a history of GD diagnosed at four years of age was noted to have a left-sided thyroid nodule. Ultrasonography demonstrated features suspicious for malignancy, including ill-defined margins and punctate microcalcifications. Fine needle aspiration cytology was consistent with a diagnosis suspicious for PTC. Computed tomography imaging confirmed no evidence of extrathyroidal extension or local invasion. The patient underwent total thyroidectomy with central compartment lymph node dissection. Histopathological examination revealed a minimally invasive variant of PTC without lymph node metastasis. Postoperatively, the patient is recovering well, undergoing thyroid-stimulating hormone (TSH) suppression therapy, and is scheduled for radioactive iodine (RAI) therapy. **Materials and Methods:** A retrospective literature review was conducted using the Cochrane database to evaluate paediatric cases of GD associated with PTC from 2015 to 2025. **Results:** The incidence of PTC in paediatric GD was identified as 10.4%, decreasing to 5.5% in patients without thyroid nodules. The classical variant of PTC was the most prevalent subtype (60%). Central lymph node metastasis was observed in 52.4% of cases, supporting the recommendation for upfront central compartment dissection. Postoperative RAI was administered in 61% of patients, with a reported complication rate of 10%. **Conclusion:** Although rare, the potential for PTC in paediatric GD necessitates vigilant evaluation. In experienced hands, favourable outcomes and minimal complication rates are archivable.

Keywords: Paediatric graves' disease, papillary thyroid carcinoma, RAI, Malaysia, surgery

A case report of remarkable clinical response to pembrolizumab as first line therapy in metastatic merkel cell carcinoma in Malaysia

Mariam Zafirah Mustazah[1], Gwo Fuang Ho[2]

[1]Clinical Oncology, Faculty of Medicine, University Malaya, 59200, Kuala Lumpur, Malaysia, [2]Curie Oncology, Cengild G.I. Medical Center, 59100, Kuala Lumpur, Malaysia

Track: Medical Professionals
Theme: Treatment

ABSTRACT

The use of immune checkpoint programmed death-1 (PD1) inhibitor, Pembrolizumab revolutionised the treatment paradigm for Metastatic Merkel Cell Carcinoma (MCC) with their high response rate, durable tumour regression and improved overall survival. Merkel Cell Carcinoma (MCC), an aggressive cutaneous neuroendocrine skin malignancy, strongly associated with the Merkel-cell polyomavirus (MCPyV) and excessive sun exposure, is believed to be immunogenic as it is more prevalent in the elderly and immunocompromised populations. We report the case of an 86-year-old lady with Stage IV Merkel Cell Carcinoma of Right Toe with Nodal and Pleural Metastasis who demonstrated rapid and significant clinical tumour response to Pembrolizumab, evidenced by resolution of the ulcerating lesion on her right foot after receiving 2 cycles. This has greatly improved her overall quality of life. This real life data supports the clinical practice of Pembrolizumab as first line treatment option in metastatic MCC in the elderly population outside of clinical trial setting, for its meaningful response and well tolerated safety profile.

Keywords: Merkle cell carcinoma (MCC), immune checkpoint inhibitor (ICI), programmed death-1 (PD-1), programmed death ligand-1 (PDL-1)

Phyllodes tumour of the breast: Clinicopathologic analysis and its implication on tumour recurrence

Surita Said[1], Siti Zubaidah Sharif[2], Chang Haur Lee[2], Nik Amin Sahid Nik Lah[3]

[1]Department of Surgery, Hospital Sultan Ismail, Jalan Mutiara Emas Utama, Taman Mount Austin, 81100, Johor Bahru, Johor, Malaysia, [2]Department of Surgery, Breast and Endocrine Unit, Hospital Queen Elizabeth II, 88300, Kota Kinabalu, Sabah, Malaysia, [3]Department of Surgery, Breast and Endocrine Unit, Hospital Queen Elizabeth II, 88300, Kota Kinabalu, Sabah, Malaysia

Track: Research
Theme: Treatment

ABSTRACT

Introduction: Phyllodes tumours represent approximately 1% of all breast neoplasms. These fibroepithelial lesions are recognized for their unpredictable clinical behaviour. Over the past several decades, research has focused on identifying key factors associated with recurrence; However, even the resection margin has yet to be conclusively linked to its recurrence risk. The aim of this study is to identify the clinicopathological factors related to recurrence of phyllodes tumour. **Materials and Methods:** The data of 63 phyllodes tumours (22 benign, 28 borderline and 12 malignant) that were surgically excised at our hospital between 2019 and 2024, were reviewed. Follow-up information including clinical radiological and pathology reports were retrieved. **Results:** Majority of cases were benign phyllodes tumour. Borderline and malignant phyllodes represent 35% and 11% respectively. Mean age of diagnosis was 44-year-old. 14.5% of cases had recurrent phyllodes and majority of them were from malignant group. Two of the cases had recurred as distance metastases. Analysis of tumour margins revealed that more than half of the cases had positive margins (defined as ink on margin or margin < 1 mm), with 16.2% of these cases showing recurrence. However, statistical analysis revealed no significant correlation between margin status and tumour recurrence ($p = 0.407$). In contrast, the presence of necrosis showed a significant correlation with tumour recurrence ($p < 0.01$), while other histological features, such as mitotic rate, infiltrative border, and degree of stromal proliferation, were not significantly associated with recurrence. **Conclusion:** Surgical margin status does not appear to influence the recurrence rate in phyllodes tumours. However, the presence of necrosis is strongly associated with tumour recurrence, highlighting the need for closer monitoring and potentially more aggressive management.

Keywords: Phyllodes tumor, recurrent phyllodes, pathology analysis of phyllodes

Addressing disparities in cancer care: The role of multidisciplinary teams in Malaysia

Fiona Lye Sze Nee[1], Thiagarajan Madheswaran[2], Noor Idayu Zahid[3], Intan Diana Mat Azmi[4], Choy Sin Lee[5]

[1]Centre of Postgraduate Studies, IMU University, Bukit Jalil, 57000, Malaysia, [2]Department of Pharmaceutical Technology, IMU University, School of Pharmacy, 57000, Bukit Jalil, Kuala Lumpur, Malaysia, [3]Department of Chemistry, Universiti Malaya, Faculty of Science, 50603, , Kuala Lumpur, Malaysia, [4]Department of Pharmaceutical Chemistry, IMU University, School of Pharmacy, 57000, Bukit Jalil, Kuala Lumpur, Malaysia

Track: Research
Theme: Treatment

ABSTRACT

Cancer is recognized as a predominant cause of global death and remains a significant global public health challenge. Dasatinib, a tyrosine kinase inhibitor (TKI), is primarily indicated for the treatment of Philadelphia chromosome-positive (Ph+) chronic myeloid leukemia (CML) in adults and children, has recently undergone extensive research on other types of solid tumour cancers, such as prostate cancer, breast cancer, glioma, lung cancer, colorectal cancer, and pancreatic cancer. Nonetheless, its clinical application is limited by poor aqueous solubility, reduced oral bioavailability, and significant elimination occurs via CYP3A4-mediated metabolism, leading to a shorter half-life of 3–4 hours. Integrating dasatinib (DAS) into lyotropic liquid crystalline nanoparticles (LLCN) presents a promising approach to addressing these limitations by enhancing the drug's solubility, safeguarding against degradation, and facilitating targeted delivery to cancer cells. Emerging evidence shows that the size of drug-loaded LLCN is a key factor in achieving clinical success. Modern techniques for fabricating LLCN can result in nanoparticles of different sizes, but they can't precisely control particle size. Hence, a microfluidic system will be used as it offers a simplified, reproducible, scalable, and accelerated process of nanomedicine development through a one-step single mixing process. The lipid, surfactant, and drug concentration were studied on their effect on the LLCN's particle size, along with the crucial parameters, such as microfluidic chip design, total flow rate, and flow rate ratio, on the preparation of LLCN were investigated using the evidence-based quality-by-design strategy. The mean LLCN particle size produced was 131.8 ± 1.9 nm (n=3), with its polydispersity index less than 0.3, and its zeta potential at -11.0 ± 0.9 mV (n=3). The study is progressing toward achieving a drug encapsulation efficiency exceeding 75%, with in vitro cell-based evaluations planned to assess cellular uptake and therapeutic potential.

Keywords: lyotropic liquid crystalline nanoparticle, microfluidic, Dasatinib, tyrosine kinase inhibitor

Anti-cancer mechanisms of curcumin in temozolomide-resistant glioblastoma cells

Wong Shu Chyi, Rakesh Naidu, Muhamad Noor Alfarizal Kamarudin

Jeffrey Cheah School of Medicine and Health Sciences, Monash University Malaysia, 47500, Bandar Sunway, Selangor Darul Ehsan, Malaysia

Track: Research
Theme: Treatment

ABSTRACT

Glioblastoma (GBM) is a WHO grade IV glioma and the most common malignant, primary brain tumour with a 5-year survival under 10%. The current standard treatment for GBM patients is surgical resection, followed by concurrent temozolomide (TMZ) and radiotherapy. Despite the significant advances in diagnostic and therapeutic approaches, GBM remains largely resistant to treatment. With increasing drug resistance, the introduction of phytochemicals into current GBM treatment has become a potential strategy to combat GBM. Phytochemicals possess multifarious bioactivities with multitarget sites and comparatively marginal toxicity. Among them, curcumin is the most studied compound described as a potential anticancer agent due to its multi-targeted signalling/molecular pathways properties in GBM. This study aims to elucidate the anti-cancer mechanisms of curcumin in LN-18, a TMZ-resistant GBM cell line. The cytotoxicity effects of curcumin were investigated using the MTT assay, while the apoptotic effects were evaluated using flow cytometry assay. The differentially expressed proteins (DEPs) in curcumin-treated cells were determined using LC-MS/MS analysis, with further protein classification and pathway analysis. Curcumin demonstrated lower IC50 values compared to TMZ with a significant greater anti-proliferative effect. Flow cytometric analysis further confirmed that the curcumin treatment significantly increased the total apoptotic cell populations compared to the untreated control cells. Protein classification and pathway analysis revealed that DEPs regulated by curcumin were associated with protease activity, protein-binding activity modulators, and scaffold/adaptor proteins, and were highly enriched in the top regulated pathway: the WNT signalling pathway. These findings suggest that curcumin exerts its anticancer effects through anti-proliferative and pro-apoptotic activities, potentially mediated by regulating WNT signalling pathways in LN-18, TMZ-resistant GBM cells.

Keywords: Glioblastoma, curcumin, tmz-resistant, cancer treatment, differentially expressed proteins (DEPs)

Proteomic analysis of a diarylpentanoid, MS13 (1,5-bis(4-Hydroxy-3-Methyoxyphenyl)-1,4-Pentadiene-3-One), in lung adenocarcinoma cells

Ssareshma Sudesh Dev, Syafiq Asnawi Zainal Abidin, Iekhsan Othman, Faridah Abas, Rakesh Naidu

Jeffrey Cheah School of Medicine and Health Sciences, Monash University Malaysia, 47500, Bandar Sunway, Selangor Darul Ehsan, Malaysia

Track: Research
Theme: Treatment

ABSTRACT

Introduction: Lung cancer is the main cause of cancer incidence and mortality globally. Non-small-cell lung cancer (NSCLC), the more common lung cancer subtype is treated with a combination of targeted, chemo- and radiotherapy. Gefitinib, an epidermal growth factor receptor (EGFR) inhibitor commonly used in NSCLC treatment, faces widespread resistance including in Malaysian EGFR-mutated NSCLC patients. Phytocompounds have gained attention in cancer research due to their therapeutic effects which may increase efficacy while overcoming resistance and toxicity. Curcumin, derived from turmeric (Curcuma longa), is an attractive anti-cancer compound however, poor bioavailability hindered its efficacy. This led to development of curcumin analogues possessing improved bioavailability such as MS13, a diarylpentanoid exhibiting potent inhibitory activity against various cancers. **Aim:** To investigate the anti-cancer mechanisms of MS13 in NCI-H1650, an EGFR-mutated lung adenocarcinoma (LUAD) cell line. Methods: Cytotoxic effects of MS13 were assessed using MTT with gefitinib as a standard drug control while apoptotic induction was analysed using flow cytometry. The proteomic profile of MS13-treated NCI-H1650 was obtained using shotgun proteomics (LC-MS/MS), followed by protein classification and pathway analysis. **Results:** MS13 exhibited significant cytotoxic effects that were greater than gefitinib, in a time- and dose-dependent manner in NCI-H1650 (IC50: 24h: 10.4µM, 48h: 5.4µM, 72h: 4.7µM). MS13 demonstrated significant apoptotic induction, further evidenced by significant induction of caspase-3/7 activity ($p<0.0001$) in NCI-H1650 compared to control. LC-MS/MS identified differentially expressed proteins (DEPs) which were downregulated in MS13-treated NCI-H1650 and subsequent pathway analysis revealed their significant association with the "RHO GTPase effectors" pathway. These DEPs include translational (RPS27), scaffold/adaptor (YWHAB, YWHAE, YWHAZ), cytoskeletal (NUDC, ACTB, PFN1, ARPC3, CFL1), protein-binding activity modulator (IQGAP1, CDC42) and chromatin/chromatin-binding, or -regulatory proteins (H2AZ2). **Conclusion:** The present findings suggest that MS13 induces cytotoxic and apoptotic effects in EGFR-mutated LUAD cells possibly via downregulation of proteins associated with RHO GTPase effectors.

Keywords: Curcumin, NSCLC, EGFR, gefitinib, curcumin analogues

Curcumin analogue diarylpentanoid, 1,5-bis(4-hydroxy-3-methoxyphenyl)-1,4-pentadiene- 3-one (MS13) inhibited proliferation and induced apoptosis on human primary gastric cancer ags cells

Faizatul Isyraqiah, Pang Kok Lun, Faridah Abas, Rakesh Naidu

Jeffrey Cheah School of Medicine and Health Sciences, Monash University Malaysia, 47500, Bandar Sunway, Selangor Darul Ehsan, Malaysia

Track: Research
Theme: Treatment

ABSTRACT

Globally, gastric cancer is the fifth most common cancer with the fourth highest mortality rate, underlining the urgent need for novel therapeutic treatments. Curcumin, a bioactive compound extracted from the plant turmeric (Curcuma longa), is known for its wide range of pharmacological effects, including anti-cancer properties. Curcumin has been shown to suppress the growth of gastric cancer both in vitro and in vivo. However, its poor absorption, low bioavailability and rapid metabolism hinder its ability to exert anti-cancer effects in the clinical setting. Our group has synthesized a series of curcumin diarylpentanoid analogues, including 1,5-bis(4-hydroxy- 3-methoxyphenyl)-1,4-pentadiene-3-one or MS13. In this study, we investigated the cytotoxic and apoptotic effects of MS13 on human primary gastric cancer AGS cells using the MTT assay and Annexin V/propidium iodide apoptosis assay, respectively. Our result showed that MS13 exhibited greater potency in 24-h cytotoxicity effect, with a half-maximal inhibitory concentration (IC50) of 7 µM, compared to curcumin (16 µM). Apoptotic analysis showed that both curcumin- and MS13-treated cells, at their respective IC50 values, primarily induced apoptosis as the main mode of cell death. The percentage of apoptotic cells following MS13 treatment was significantly higher compared to curcumin, suggesting MS13 is more potent than curcumin. Additionally, MS13 induced significant morphological alterations, with greater apoptotic changes observed after 24 hours of treatment. In conclusion, MS13 inhibits AGS cell viability mainly via apoptosis induction and is more potent than curcumin. Further studies are required to explore the underlying molecular mechanisms of MS13-induced cytotoxicity and apoptosis.

Keywords: Curcumin, curcumin analogue, gastric cancer

Elucidating IFI6 and RSAD2 protein expression in oral squamous cell carcinoma using immunohistochemistry and aptahistochemistry with novel in silico DNA-aptamers

Danial Qasim Butt[1], Nur Asyilla Binti Che Jalil[2], Masitah Hayati Harun[1], Shazana Hilda Shamsuddin[2], Saidi Jaafar[3], Basaruddin Ahmad[4]

[1]Oral Medicine and Oral Pathology Unit, School of Dental Sciences, Universiti Sains Malaysia, 16150, Kota Bahru, Kelantan, Malaysia, [2]Department of Pathology, School of Dental Sciences, Universiti Sains Malaysia, 16150, Kota Bahru, Kelantan, Malaysia, [3]Basic Sciences Unit, School of Dental Sciences, Universiti Sains Malaysia, 16150, Kota Bahru, Kelantan, Malaysia, [4]Biostatistics Unit, School of Dental Sciences, Universiti Sains Malaysia, 16150, Kota Bahru, Kelantan, Malaysia

Track: Research
Theme: Screening and Diagnosis

ABSTRACT

Emerging research identifies interferon-stimulated genes (ISGs) such as IFI6 (Interferon Alpha-Inducible Protein 6) and RSAD2 (Radical S-Adenosyl Methionine Domain-Containing 2) as protumorigenic biomarkers, promoting cancer proliferation and survival. Although their role in apoptotic dysregulation is recognised, their involvement in immune evasion within the oral squamous cell carcinoma (OSCC) tumour microenvironment (TME) remains underexplored, necessitating improved biomarker detection technologies. This study examines IFI6 and RSAD2 protein expression in cancer and immune cells (neutrophils, plasma cells, and lymphocytes) within the OSCC TME using immunohistochemistry (IHC) and aptahistochemistry (AHC) with in silico-derived DNA aptamers. It also designs, characterises, and validates these aptamers for potential AHC application. IFI6 and RSAD2 expression were analysed in OSCC (n=23) and healthy (n=7) tissues via IHC and AHC. Correlations with cancer, immune cell presence, and histological grades were statistically assessed. DNA aptamers were designed in silico, with binding interactions characterised via molecular docking, PyMOL, and PLIP, while molecular dynamics simulations in GROMACS evaluated complex stability (RMSD) and aptamer flexibility (RMSF). Stem-hairpin loop DNA aptamers (35–50 meters) were successfully developed for IFI6 and RSAD2. Among them, 35- and 50-mer IFI6 and 35- and 45-mer RSAD2 aptamers exhibited high binding affinity (-15.7 to -18.7 kcal/mol), strong hydrogen bonding (<4 Å), stable RMSD (<0.4 nm), and flexible loop regions (RMSF >0.4 nm). IHC and AHC analyses revealed significant IFI6 and RSAD2 expression in OSCC tissues, while absent in healthy samples ($p<0.05$). Expression levels were markedly elevated in poorly differentiated tumour grades and tumour-associated immune cells ($p<0.05$). This study confirms IFI6 and RSAD2 expression in OSCC cancer and immune cells, correlating with higher tumour grades. These findings support their potential as prognostic biomarkers in the TME. The in silico-derived DNA aptamers demonstrate strong binding characteristics and hold promise for AHC-based OSCC detection, offering a cost-effective and reliable diagnostic alternative.

Keywords: IFI6, RSAD2, OSCC, Tumour Microenvironment, In Silico-derived DNA-Aptamers

Expanding access to cancer care: Integration of the ECHO model in Southeast Asia

Rosmawati Mohamed[1], Tarun Kumar[2], Clayton Richards[3], Elyse Barnes[3], Kumud Rai[2], Sunil Anand[2], Sanjeev Arora[4]

[1]Department of Internal Medicine, University Malaya Medical Centre, 59100, Kuala Lumpur, Malaysia, [2]ECHO India, 110020, New Delhi, India, [3]Cancer ECHO Initiative, Project ECHO, 87131, Albuquerque, New Mexico, United States, [4]Department of Internal Medicine, University of New Mexico, 87131, Albuquerque, New Mexico, United States

Track: Determinants of Health
Theme: Screening and Diagnosis

ABSTRACT

Introduction: The Southeast Asia Region faces more than 2.3 million cancer diagnoses and 1.4 million cancer-related deaths each year, according to the WHO. Much of this burden can be overcome through prevention, early diagnosis, and timely linkage to treatment; however, a constellation of geographic- and resource-related barriers constrain delivery of best-practice care. Project ECHO aims to improve these circumstances by supporting providers with an evidence-based model for multidisciplinary, guided practice mentorship and support. **Materials and Methods:** Beginning in 2023, Project ECHO and partners throughout Malaysia, Indonesia, Vietnam, and India deployed the ECHO Model to strengthen the skills and capacity of local health care workers in cancer prevention, diagnosis, treatment, survivorship, and palliative care. In these virtual, collaborative learning environments, experts from major cancer care centers engage in continuous telementoring with local health care workers. Zoom video conferencing, the iECHO virtual learning platform, and a central data repository were used to implement and evaluate this initiative. **Results:** Thirty-nine hubs in the targeted countries implemented 102 Cancer ECHO programs. These programs spanned the full cancer care continuum and engaged 66,129 participants across diverse cadres of the health care workforce. Globally, over 200 organizations across 36 countries have implemented more than 800 ECHO programs to improve local cancer care delivery. This scale is accompanied by growing evidence of Cancer ECHOs' efficacy, with over 130 related, peer-reviewed publications thus far. Studies highlight a range of impacts on provider knowledge, confidence, and performance, including statistically significant knowledge gains in topics such as HPV vaccination, tobacco cessation, and oral cancer screening. **Conclusion:** The ECHO Model effectively supports contextualized implementation of best-practice care and builds the capacity of healthcare providers, particularly in underserved populations. Its ability to facilitate knowledge exchange can reduce barriers to cancer care delivery and improve patients' lives at massive scale across Southeast Asia and beyond.

Keywords: Training, mentoring, capacity development, health system strengthening, southeast asia

Financial assistance for low-income cancer patients: A five-year utilisation review of a public–private partnership initiative in Malaysia

Nurul Asyiqin Aziz, Maizura Abdul Jabar, Anis Farhana Badrul Hisham

ProtectHealth Corporation Sdn Bhd, 63000, Cyberjaya, Selangor, Malaysia

Track: Determinants of Health
Theme: Treatment

ABSTRACT

Introduction: PeKa B40 is a public-private initiative aimed at supporting the healthcare needs of the low-income groups nationwide. The scheme comprises of four benefits, including the Completing Cancer Treatment Incentive (CCTI) and Transport Incentive (TI). Recipients of government cash aid are automatically eligible for PeKa B40, with CCTI and TI applied concurrently unless opted out. These incentives aim to provide some financial risk protection for low-income cancer patients encouraging them to complete their oncology treatment. This data review profiles the utilisation trends over the five years since program initiation. **Materials and Methods:** Data on beneficiaries of CCTI and linked data for TI from 2019 until 2024 were extracted from ProtectHealth's BMS database. Benefit payouts in Ringgit Malaysia (RM) were calculated based on total claims paid. Descriptive analysis was performed to summarise trends by year, cancer type, state and sociodemographic characteristics. **Results:** Since 2019, nearly RM 6 million was disbursed under CCTI benefiting 10,213 patients. Meanwhile, about RM 3 million was paid across 32,803 TI claims by the CCTI recipients. However, less than 25% of patients fully utilised the RM 1,000 CCTI benefit. Beneficiaries were referred by 65 public hospitals across Malaysia, with Sabah hospitals cumulatively reporting the highest share of beneficiaries and number of claims for both CCTI and TI. Nearly all patients receiving CCTI (99.7%) also utilized TI during their treatment. Utilization of CCTI by cancer type observed that breast cancer accounted for the majority at 28.4%, followed by colorectal cancer (14.9%), and cervical cancer (6.8%). Most of the beneficiaries were female (66%), Malay (43%) and in the 60-69 age group (37%). **Discussion:** The increasing trend of annual benefit utilisation underscores the scheme's potential in supporting low-income cancer sufferers amidst rising national incidence for all-type cancer. Conclusion: Financial incentives can reduce the burden among B40 patients and encourage treatment completion.

Keywords: Cancer, financial incentive, transportation, public-private partnership, low-income population

Selective pro-apoptotic and anti-proliferative effects of nisin ZP against MG-63 osteosarcoma cells

Muhammad Fairuz Azmi[1], Alyaa Al-Khateeb[2], Gabriele Froemming[3], Effat Omar[4], Sharaniza Ab Rahim[2]

[1]Department of Anatomy, Faculty of Medicine, Universiti Kebangsaan Malaysia, Sungai Buloh, 47000, Kuala Lumpur, Malaysia, [2]Department of Biochemistry and Molecular Medicine, Faculty of Medicine, Universiti Kebangsaan Malaysia, Sungai Buloh, 47000, Kuala Lumpur, Malaysia, [3]Department of Dentistry, Centre for Preclinical Science, Universiti Kebangsaan Malaysia, Sungai Buloh, 47000, Kuala Lumpur, Malaysia, [4]Department of Pathology, Faculty of Medicine, Universiti Kebangsaan Malaysia, Sungai Buloh, 47000, Kuala Lumpur, Malaysia

Track: Research
Theme: Treatment

ABSTRACT

Osteosarcoma (OS), the most common primary bone cancer, has been explored for novel therapy due to its difficult-to-treat nature. Nisin, a known bacteriocin used as a food preservative, has shown promising anticancer effects in several in vitro and animal cancer studies. However, data on its OS cell selective killing effect is scarce. Aim: This study investigates the selectivity of nisin ZP (NZP) as a potential anticancer agent against MG-63 OS cells. Method: Monolayered culture of MG-63 OS and hFOB1.19 osteoblast cells at 37°C, 5% CO2 were treated with 543.8 µg/ml NZP followed by annexin and cell death assay, BAX and BCL-2 protein expression analysis via ELISA, and cell cycle assay analysis. Results: At 48 hours, the annexin assay revealed 59.18±2.56% live cells in NZP-treated MG-63, which is significantly lower compared to hFOB1.19 (85.25±1.02%) (p=0.04). In contrast, 38.73±1.51% of early apoptotic cells were recorded in NZP-treated MG-63, which is significantly more abundant than hFOB1.19 cells (14.00±5.80%) (p=0.002). ELISA showed significantly higher expression of BAX protein in NZP-treated MG-63 compared to non-treated MG-63 (p=0.005) and NZP-treated hFOB1.19 (p=0.016). However, no significant difference in the expression of BCL-2 between NZP-treated MG-63 and hFOB1.19 (p=0.665), as well as between the NZP-treated MG-63 and control. The percentage of MG-63 cells in the G2/M phase of the cell cycle is significantly higher when treated with NZP (33.50±1.35%) compared to control (15.8±2.31) (p<0.001) and NZP-treated hFOB1.19 (10.30±6.88%) (p=0.005). Conclusion: Higher abundance of early apoptotic cells in NZP-treated MG-63 is supported by the significant co-expression of pro-apoptotic protein, BAX and low anti-apoptotic protein, BCL-2. Increased cell cycle arrest at G2/M phase in NZP-treated MG-63 reduces cancer cell proliferation. This study demonstrates the selectivity of nisin as a pro-apoptotic and anti-proliferative agent for OS, thus offering potential as an anticancer.

Keywords: Osteosarcoma, nisin, apoptosis, cell cycle, BAX, BCL-2, MG-63

The cost-effectiveness of genetic testing strategies to diagnose lynch syndrome in incident colorectal cancer patients in Singapore

Sara Tasnim[1], Joanne Ngeow[1], Huijun Zhou[2], Ken Redekop[3]

[1]Lee Kong Chian School of Medicine, Nanyang Technological University, 319581, Singapore, [2]Singapore Clinical Research Institute, Consortium for Clinical Research and Innovation, 139234, Singapore, [3]Institute for Medical Technology Assessment, Erasmus Universiteit Rotterdam 503062, The Netherlands

Track: Research
Theme: Screening and Diagnosis

ABSTRACT

Introduction: Universal genetic testing in colorectal cancer (CRC) patients coupled with cascade testing among family members has been proposed as a public health strategy to reduce LS-related cancer burden in a cost-effective manner. However, it has never been validated in Singapore's context. Therefore, the current study aims to investigate whether universal genetic testing plus cascade testing is cost-effective to detect and manage LS in incident CRC patients and their first-degree relatives (FDRs). **Materials and Methods:** This model-based economic evaluation adopted a healthcare system perspective to compare universal genetic testing with universal tumor-based testing strategies (standard of care) and no testing. A decision tree along with Markov models was constructed to simulate the lifetimes of CRC patients and their FDRs (siblings and children), estimating the outcomes of the diagnostic strategies, LS-associated cancer surveillance, and/or prophylactic surgery. We assumed that probands develop up to two cancers and the second cancer can be either CRC, gastric or endometrial cancer. We also assumed 30% acceptance of genetic testing in the FDRs and 80% compliance with LS-specific surveillance programs in the simulated population. Costs and quality-adjusted life years (QALYs) were calculated for each strategy and discounted at 3% annually. Costs were in SGD, May 2024. **Results:** In the base-case analysis with ~4 FDRs per patient, immunohistochemistry-guided GT strategy was the most cost-effective strategy with an incremental cost-effectiveness ratio (ICER) of 32,307/QALY. Universal GT is the most effective strategy, detecting 99.5% of LS cases and yielding the highest QALYs, but requires a higher WTP to be cost-effective. **Conclusion:** In Singapore, universal genetic testing is likely cost-effective for LS screening in incident CRC patients compared to no testing, but not compared to IHC-guided GT. This finding has significant policy implications, supporting the consideration of universal genetic testing as a routine strategy and subsidy allocation.

Keywords: Cost-utility analysis, genetic testing, Lynch syndrome, Colorectal cancer, economic evaluation

Predicting factors for pathological complete response after neoadjuvant chemotherapy in breast carcinoma -a single centre experience

Wei Keong Loo, Nur Bazlaah Bahari, Nadiah Basir, Dhiauddin Hai Ismail, Juliana Abdul Latiff

Department of Surgery, Hospital Selayang, 68100, Batu Caves, Selangor, Malaysia

Track: Medical Professionals
Theme: Treatment

ABSTRACT

Introduction: Neoadjuvant chemotherapy plays an important strategy role nowadays in the treatment of breast cancer. Several studies suggest that patient who achieves pathological complete response after neoadjuvant chemotherapy has better prognosis. Aims: The study aims to identify the clinic-pathological factors that favor pathological complete response after neoadjuvant chemotherapy in patient with invasive breast carcinoma. **Materials and Methods:** 90 patients with invasive breast carcinoma who underwent chemotherapy followed by surgery were retrospectively analyzed in Hospital Selayang between January 2022 and March 2025. Their clinical and pathological data was collected and analysed for correlation. Miller Payne grading is used to assess pathological response of tumour. **Results:** Majority patients are triple negative subtype breast carcinoma (32%), followed by luminal A subtype (28%), Her2 enriched subtype (21%), luminal B subtype (19%). 21(23%) Patients was found achieved Miller-Payne grade 5 whereas 49 (54%) showed partial pathological response and 20 (22%) patients had no response. Majority patient who achieved pathological complete response were Her2 positive subtype (52%). The presence of Her2 positivity and hormone receptor negativity were found associated with complete pathological response. Age, race, menopause, tumour site, multicentricity, clinical T stage (cT) and clinical axillary lymph node stage (cN) have not correlation with complete pathological response. **Conclusion:** Her2 amplification and hormone receptor negativity are the predictor for pathological complete response after neoadjuvant chemotherapy in invasive breast carcinoma in our centre.

Keywords: Pathological complete response, breast carcinoma, neoadjuvant chemotherapy, predictors, miller-payne grading

The prevalence and predictors of coexisting thyroid malignancy in toxic multinodular goiter – a 17-year retrospective study by an East Coast Malaysian centre for endocrine surgery

Husna Harun, Junaidi Awang Isa, Wan Suriza Wan Abdul Rahman, Siti Salwa Mohamad Shokri, Imi Sairi Ab Hadi

Surgical Department, Hospital Raja Perempuan Zainab II, Kota Bharu, 8000, Kelantan

Track: Medical Professionals
Theme: Screening and Diagnosis

ABSTRACT

Introduction: East coast Malaysia especially Kelantan is known for an endemic goiter disease in which multinodular goiter (MNG) was around 70% and up to 1/4 were toxic. Iodine deficiency is addressed as the biggest contributing factor towards the disease. The incidence of thyroid malignancy in toxic MNG was believed to be lower formerly but a few recent studies suggested that the incidence was increasing in trend. **Materials and Methods:** A retrospective review was conducted. Patients who underwent surgery for Toxic MNG from January 2007 until June 2024 were included however recurrent diseases, completion surgery and history of irradiation were excluded. The univariate and multivariate analyses were performed to identify predictors of malignancy. **Results:** Total of 1269 patients had undergone thyroid surgery for goiter and 261 patients were found to be toxic MNG (20.6%). Incidence of malignancy in toxic MNG was 18.6% which was comparable to non-toxic MNG around 20.2%. The most common malignancy among toxic MNG patients were papillary thyroid carcinoma (95.3%). No significant predictors of malignancy were found on statistical analysis. **Conclusion:** Even while thyroid stimulating hormone (TSH) is suppressed; patients with toxic MNG have a quite high prevalence of incidental thyroid cancer. No obvious predicting factors was identified. For individuals with toxic MNG, total thyroidectomy ought to be the recommended surgical procedure given the incidence of coexisting malignancy.

Keywords: Thyroid, multinodular, toxic, carcinoma, surgery

Association of GnRH receptor type-II overexpression and poor clinical profiles in ovarian cancer: Possibility of novel targeted treatment

Muhammad Ary Zucha[1], Agil Wicaksono[2], Nungki Anggorowati[3], Ardhanu Kusumanto[1], Andi Kurniadi[4]

[1]Department of Obstetrics and Gynecology, Faculty of Medicine, Universitas Gadjah Mada, RSUP Dr. Sardjito Jl. Kesehatan No. 1 Sekip Sleman, Yogyakarta 55283, Indonesia, [2]Institut Pertanian Bogor, Faculty of Medicine, 55282, Bogor, West Java, Indonesia, [3]Department of Pathological Anatomy, Faculty of Medicine, Universitas Gadjah Mada, 55282, Sleman, Yogyakarta, Indonesia, [4]Department of Gynecology, Faculty of Medicine, Universitas Padjadjaran, 55282, Bandung, West Java, Indonesia

Track: Research
Theme: Treatment

ABSTRACT

Introduction: Ovarian cancer is considered as a 'silent lady killer' due to high mortality rate. This is due to late diagnosis of ovarian cancer that correlates with poor prognosis. Receptor type-II of GnRH (GnRHR-II) is relatively novel surface receptor that recently attracts attention due to overexpression in several diseases. Study of GnRHR-II in ovarian cancer in association with clinical profiles may provide important evidence to develop novel therapeutic modality. **Materials and Methods:** We measured in-situ expression level of GnRHR-II in microarray of ovarian cancer tissues. Expression level was quantified with ImageJ software to provide accurate measurement. expression level of GnRHR-II among different subtypes in the microarray was tested statistically (unpaired t-test). **Results:** Compared to another histotypes, endometrioid type showed significant overexpression of GnRHR-II ($p<0.05$). in addition, GnRHR-II expression was also higher in patients with larger tumor size and more advanced stage ($p=0.035$; $p=0.042$). **Conclusion:** We found that ovarian cancer tissues, especially endometrioid type overexpressed GnRHR-II and was associated with poorer clinical outcome. Our findings may benefit ovarian cancer, especially patients with endometrioid histotype, to receive antiGnRH targeted treatment.

Keywords: Ovarian cancer, GnRH receptor type II, targeted treatment, quantitative immunohistochemistry, endometrioid type

Awareness, perception, and practice toward T&CM regulation and factors influencing use of registered T&CM practitioners among breast cancer patients at UMMC

Suniza Jamaris[1], Suang Meng Yeoh[2], Fariza Mohd Hairi[2]

[1]Department of Surgery, Faculty of Medicine, Universiti Malaya, 50603, Kuala Lumpur, Malaysia, [2]Department of Social and Preventive Medicine, Faculty of Medicine, Universiti Malaya, 50603, Kuala Lumpur, Malaysia

Track: Medical Professionals
Theme: Survivorship

ABSTRACT

Introduction: The enforcement of the Traditional and Complementary Medicine (T&CM) Act 2016 [Act 775] and registration of practitioners aim to protect the public from unqualified T&CM providers and ensure professional standards. Awareness campaigns have been launched to promote consumer rights and safe T&CM use. In Malaysia, T&CM use is common among breast cancer patients. This study assesses their awareness, perception, and practice towards current T&CM regulations and factors associated with consulting registered practitioners in recognised practice areas (RPA). **Materials and Methods:** A cross-sectional study was conducted from May to August 2024 among breast cancer patients attending outpatient clinics at University Malaya Medical Centre. Self-administered, validated questionnaires in Malay, English, and Chinese were used to collect data on sociodemographics, clinical background, and awareness, perception, and practice regarding T&CM regulations. **Results:** A total of 232 respondents completed the survey. While 59.5% had positive perceptions, awareness was low (46.6%). Despite this, 85.3% reported seeing registered T&CM practitioners. Notably, 31.9% were unsure and 17.2% disagreed that the regulation protects against bogus practitioners. Half of the respondents lacked confidence or were unsure about considering T&CM as a healthcare option. Most agreed on the importance of competency monitoring (88.7%), with 57.3% suggesting annual assessments. High awareness (aOR = 22.43; 95% CI: 2.86–175.61; p = 0.003) and being non-users of T&CM (aOR = 3.63; 95% CI: 1.54–8.59; p = 0.003) were significantly associated with consulting registered practitioners. **Conclusion:** Findings reveal gaps in awareness and trust in T&CM regulations, particularly regarding complaint mechanisms, advertising restrictions, and practitioner verification. Many patients remain sceptical about regulatory effectiveness but support regular competency checks. Policymakers should strengthen consumer education, practitioner registration, and monitoring systems and encourage public participation in regulatory development to build trust.

Keywords: Traditional and complementary medicine, act, regulation, registered practitioners, awareness, perceptions, practice

Prevalence of p53 mutation in low-risk endometrial cancer

Muhammad Ary Zucha[1], Faizah Dwi Tirtasari[2], Ardhanu Kusumanto[1], Andi Kurniadi[3]

[1]Department of Obstetrics and Gynecology, Faculty of Medicine, Universitas Gadjah Mada, RSUP Dr. Sardjito Jl. Kesehatan No. 1 Sekip Sleman, Yogyakarta 55283, Indonesia, [2]Department of Pathological Anatomy, Faculty of Medicine, Universitas Gadjah Mada, 55282, Sleman, Yogyakarta, Indonesia, [3]Department of Gynecology, Faculty of Medicine, Universitas Padjadjaran, 55282, Bandung, West Java, Indonesia

Track: Medical Professionals
Theme: Screening and Diagnosis

ABSTRACT

Introduction: Endometrial cancer mostly comes in early stage that represents favorable outcome. However, recent findings found that molecular profiles significantly correlate with prognosis. Therefore, special consideration may be needed in low-risk endometrial cancer to get timely adjuvant treatment. Mutation of p53 plays an important role in cell cycle progression, thereby the mutation needs consideration to cancer progression. **Materials and Methods:** We performed immunohistochemical staining to define p53 mutation in 84 endometrial cancer patients. The examination of immunohistochemistry was based on percentage and intensity of cellular staining. In addition, longitudinal evaluation of the staining status was compared with survival and clinical profiles (histotype, stage, grade, age at diagnosis, resectability, recurrence). **Results:** We found that p53 mutation might be seen in nucleus or cytoplasm. Strong expression in nucleus highly indicated p53 mutation. The prevalence of p53 mutation in low-risk endometrial cancer was 19.05%. Moreover, low risk patients with p53 mutation were more like to have recurrence and adjuvant therapy. **Conclusion:** Reconsideration of low-risk endometrial cancer based on molecular profiling may provide better therapeutic strategy. Mutation of p53 may be further applied in low-risk endometrial cancer to define the needs of adjuvant treatment.

Keywords: Endometrial cancer, p53 mutation, risk stratification, diagnosis

Early cancer detection training for primary care providers in Malaysia: Experience from the REBUNG cancer care in primary care short course

Suniza Jamaris[1], Christine Shamala Selvaraj[2], Yong Kek Pang3, Chong Guan Ng[4], Hamizah Sa'at[1], Nur Aishah Mohd Taib[1]

[1]Department of Surgery, Faculty of Medicine, Universiti Malaya, 50603, Kuala Lumpur, Malaysia, [2]Department of Primary Care Medicine, Universiti Malaya, Faculty of Medicine, 50603, Kuala Lumpur , Kuala Lumpur, Malaysia, [3]Department of Medicine, Universiti Malaya, Faculty of Medicine, 50603, Kuala Lumpur, Kuala Lumpur, Malaysia, [4]Department of Psychological Medicine, Universiti Malaya, Faculty of Medicine, 50603, Kuala Lumpur, Kuala Lumpur, Malaysia

Track: Medical Professionals
Theme: Screening and Diagnosis

ABSTRACT

Introduction: The Malaysian National Cancer Registry has reported an increase in late-stage presentations of most prevalent cancers. One promising strategy to improve timely diagnosis is to train community-based general practitioners (GPs) on how to detect cancers early, as they are closer to the community. A 15-week online training programme for GPs on Malaysia's five most prevalent cancers (breast, colorectal, lung, cervical, and prostate cancers) was developed to improve GPs' knowledge and practise on early cancer screening and diagnosis. Objective: To evaluate the effectiveness of the online module on GPs' knowledge and intention to change practice for early cancer screening and diagnosis. **Materials and Methods:** The course was self-paced, with introductory and closing sessions conducted live via the project iECHO® platform. Pre- and post-module surveys assessed participants' knowledge and intended changes in practice. The completion rate was determined by the number who completed all required tasks and questionnaires. The pilot (Jan–Mar 2022) involved 10 participants. With greater stakeholder engagement, enrolment grew in 2023 and 2024. **Results:** Enrolment increased from 97 participants in 2023 to 219 in 2024. Completion rates declined from 71.1% (69/97) to 55.3% (121/219). Among those completing both assessments, knowledge scores improved. In 2023, median scores rose from 8 (range 4–16) to 12 (range 5–16); in 2024, from 7 (range 4–13) to 10 (range 4–16). Across both years, over 90% of respondents indicated an intention to change practice, including adopting psychosocial support and improved patient navigation. **Conclusion:** The course significantly improved knowledge and intent to change practice. However, the drop in completion rates suggests barriers such as scheduling conflicts and competing demands. Efforts to address these barriers, such as offering flexible scheduling options or integrating the course into existing professional development programs, may help increase participation rates and maximise the impact of the training on clinical practice.

Keywords: Early Cancer Detection, online training, primary care, cancer training programme, cancer screening

Ocular surface squamous neoplasia: A retrospective review from tertiary eye care centres in Malaysia

Che Mahiran Che Daud[1], Nor Sharina Yusof[1], Shamala Retnasabapathy[1], Rohanah Alias[2], Rosilah Mohamed[2]

[1]Ophthalmology, Hospital Sungai Buloh, 47000, Sungai Buloh, Selangor, Malaysia, [2]Ophthalmology, Hospital Kuala Lumpur, 50586, Kuala Lumpur, Malaysia

Track: Medical Professionals
Theme: Screening and Diagnosis

ABSTRACT

Introduction: Ocular surface squamous neoplasia (OSSN) is a spectrum of diseases encompassing from mild, moderate and severe dysplasia to invasive squamous cell carcinoma of the ocular surface. The purpose of this study is to review the clinical-demographic profile, histopathological features, and recurrence in patients with OSSN. **Materials and Methods:** This is a retrospective cohort study design involved patients with proven histopathological report of either corneal-conjunctival intraepithelial neoplasia (CIN) or squamous cell carcinoma (SCC) from January 2016 to December 2021 at two Tertiary Eye Centres in Malaysia. The patients' demographics, symptoms, clinical characteristics, histopathology, treatments, and outcomes were reviewed. **Results:** A total of 62 eyes involving 59 patients with proven OSSN were studied. Majority of the cases were male (76.3%), with a mean age of 65. 2 ± 11.81 years. About 32.2% worked as a farmer. Sun exposure and smoking are the predominant risk factors observed in this study. Histopathological examination revealed 69.4% were CIN, while 30.6% were SCC. Majority of the cases were treated surgically with adjunctive cryotherapy and topical MMC postoperatively. There were 5 cases (8.1%) of tumor recurrence after 1 year post excisional biopsy. Two cases of recurrence were treated with topical MMC and had completed resolution. Another 3 cases required surgical excision after chemo- reduction with topical MMC. Tumor pigmentation showed the significant risk factor that influences the recurrence of the tumors ($p = 0.026$). **Conclusion:** CIN is more common than SCC, which affects the male population in Malaysia with a background history of sun exposure and smoking. The recurrence rate was reduced with the use of topical Mitomycin C as an adjunctive treatment postoperatively. Nevertheless, the presence of tumour pigmentation may be associated with the recurrence of OSSN.

Keywords: Cornea, Conjunctiva, Intra-epithelial neoplasia, Ocular surface squamous neoplasia, squamous cell carcinoma

Anticancer activity of Hopea odorata Roxb. stem bark aqueous, ethanolic extracts to Caco-2 colon adenocarcinoma cell line

Jitwadee Inthagard[1], Gornganok Piboonpol[2], Putthaporn Keawmeesri[2], Ruhainee Tohkayomatee[2]

[1]Clinical Pathology, Princess of Naradhiwas University, Faculty of Medicine, 96000, Narathiwas, Narathiwat, Thailand, [2]Pharmacology, Princess of Naradhiwas University, Faculty of Medicine, 96000, Narathiwas, Narathiwat, Thailand

Track: Research
Theme: Treatment

ABSTRACT

Introduction: Cancer is one of the causes of fatality around the globe, including colon cancer. Cancer treatment now relies on surgery, chemotherapy and radiotherapy. Drug resistance is one of the major concerns of treatment failure. An alternative cancer treatment is pointed out to natural products alone or in combination with commonly used drugs to improve their efficacy. Aims The study aims to test the antioxidant, anticancer, total phenolic and total flavonoids from Hopea odorata Roxb. stem bark extracted under different conditions: decoction and maceration. **Materials and Methods:** Stem barks were dried at 60°C and grounded to powder, then extracted by decoction at 60°C and 95°C for an hour. The maceration method with 50% and 95% ethanol for seven days and repeated three times. Antioxidant activity was tested by DPPH radical scavenging capacity assay. Total phenolic compound was tested by Folin-Ciocaltel colorimetric assay. Total flavonoids content was tested by aluminium chloride reagent. Cytotoxicity to Caco-2 colon adenocarcinoma cell line was determined by MTT assay. **Results:** For antioxidant activity, aqueous extract 60°C, 95°C and 50%, 95% ethanolic extracts presented IC50 at 195.22±1.85, 85.93±5.82 and 136.04±17.06, 144.62±32.61 µg/ml, respectively. Total phenolic compounds from 95°C aqueous extracts presented the highest at 240.69±2.06 mg GAE/g extract. Total flavonoid contents from 60°C aqueous extracts presented the highest at 131.67±4.92 mg QE/g extract. Cytotoxicity to the Caco-2 cell line by MTT assay of aqueous extracts (65°C and 95°C) and ethanolic extracts (50% ethanol and 95% ethanol) exhibited IC50 at 414.94, 417.66, 468.90, and 528.80 µg/ml, respectively. **Conclusion:** Hopea odorata Roxb. stem bark extracts from decoction and maceration exhibited various antioxidant activity and cytotoxicity to the Caco-2 cell line in this study. The aqueous extracts at 60°C and 95°C have higher levels of total phenolic compounds and total flavonoid contents when compared to 50% and 95% ethanolic extracts.

Keywords: Cancer, Hopea Odorata, Antioxidant, Total phenolic compounds, Colon cancer

Physical activity and their relationships with quality of life and cancer-related fatigue in breast cancer survivors in Malaysia

Aiman Nadia Akmar Rahman[1], Ooi Foong Kiew[2], Maria Justine[1], Mohd Nidzam Jawis[2]

[1]Centre for Physiotherapy Studies, Faculty of Health Sciences, Universiti Teknologi MARA, Puncak Alam Campus, Puncak Alam, 42300, Selangor, Malaysia, [2]Exercise and Sport Science Programme, School of Health Sciences, Universiti Sains Malaysia, 16150, Kota Bharu, Kelantan, Malaysia

Track: Allied Health
Theme: Survivorship

ABSTRACT

Introduction: The main aim of the study was to determine relationships between components of physical activity level with quality of life and cancer-related fatigue among breast cancer survivors in Malaysia. **Materials and Methods:** Eighty-three female breast cancer survivors with mean age 52.8 (8.7) years old participated in this study. The participants answered short form International Physical Activity Questionnaire (SF IPAQ) to identify physical activity level, Breast Cancer Functional Assessment of Cancer Therapy (FACT-B) questionnaire for determining quality of life (QoL) and Brief Fatigue Inventory (BFI) scale questionnaire for assessing cancer-related fatigue (CRF). Descriptive statistic and Pearson correlation were performed for statistical analysis. **Results:** The present study found that there was a significant positive correlation between time spent for moderate to vigorous physical activity (Mins/week MVPA) and functional wellbeing, a component of QoL (r=0.217, p=0.049). A significant negative correlation between days spent for moderate physical activity (Days/week MPA) and severity of fatigue, a component of CRF (r=-0.234, p=0.033) was observed. A negative correlation between total CRF score and total QoL score (r=-0.298, p=0.01) was also observed. **Conclusion:** The evidences of significant positive relationship between time spent for MVPA and functional well-being, a component of QoL, and a significant negative relationship between severity of fatigue and days spent for moderate physical activity (MPA) reflect that physical activity might improve QoL and reduce severity of CRF in Malaysian breast cancer survivors.

Keywords: Breast cancer survivors, physical activity, cancer-related fatigue, quality of life, functional well-being

Guideline adherence in the prophylaxis of acute chemotherapy-induced nausea and vomiting among paediatric patients

Yong Zheng Seah[1,2], Noraida Mohamed Shah[1], C-Khai Loh[3], Muhammad Faris Suliman[4]

[1]Faculty of Pharmacy, Universiti Kebangsaan Malaysia, 50300, Kuala Lumpur, Malaysia, [2]Pharmacy Department, Hospital Wanita dan Kanak-Kanak Sabah, Kota Kinabalu, 88996, Sabah, Malaysia, [3]Department of Paediatrics, Hospital Tunku Ampuan Besar Tuanku Aishah Rohani, Hospital Pakar Kanak-kanak Universiti Kebangsaan Malaysia, Universiti Kebangsaan Malaysia, 56000, Kuala Lumpur, [4]Pharmacy Department, Hospital Tunku Ampuan Besar Tuanku Aishah Rohani, Hospital Pakar Kanak-kanak Universiti Kebangsaan Malaysia, Universiti Kebangsaan Malaysia, Kuala Lumpur, 56000, Malaysia

Track: Research
Theme: Treatment

ABSTRACT

Introduction: Chemotherapy-induced nausea and vomiting (CINV) is a distressing adverse effect that can severely impact quality of life of paediatric patients undergoing cancer treatment. Although international antiemetic prescribing guidelines were made available, studies have shown inconsistent adherence to the guideline recommendations. **Objective:** This study aimed to investigate the adherence to CINV guideline in paediatric oncology patients for the prophylaxis of acute CINV, incidence of acute CINV, and the association between guideline adherence and CINV control. **Materials and Methods:** A retrospective chart review was conducted at Hospital Tunku Ampuan Besar Tuanku Aishah Rohani, Hospital Pakar Kanak-Kanak Universiti Kebangsaan Malaysia (HPKK), included paediatric patients who received highly, moderately, and low emetogenic chemotherapy between June 2022 to May 2024. CINV guideline adherence was compared against the international Pediatric Oncology Group of Ontario (POGO) CINV Guideline 2022. **Results:** 106 patients were included in the study. Granisetron was the most frequently prescribed antiemetics for the prophylaxis of acute CINV, followed by dexamethasone and metoclopramide. No patient received aprepitant. It was shown that 53% of patients received antiemetics adherence to the international guideline. The incidence of acute CINV was 20%. Patients who received antiemetic prophylaxis adherent to the international guideline had significantly higher rate of CINV control compared to those non-adherents (96.4% vs 62%, respectively; $p<0.001$). **Discussion:** Underprescription of dexamethasone and aprepitant was observed, deviating from the recommendations by the international guideline according to emetogenicities. It was due to concerns about adverse effects associated with dexamethasone and absence of aprepitant from the formulary. Adhering to guidelines improve CINV control, leading to their adoption in practice. **Conclusion:** This study highlights that adherence to the international guideline contributed to better CINV control. Strategies to improve guideline adherence should be addressed, such as underprescription of antiemetics and the adoption of the international guideline into local practice, to improve CINV outcomes.

Keywords: Chemotherapy-induced nausea and vomiting (CINV), antiemetic prescribing patterns, CINV control, antiemetic guideline adherence, paediatric cancer patients

LINC00266-1 is associated with tocotrienol-rich fraction cytotoxicity in triple-negative breast cancer cells

Jacelyn Lee[1], Ammu Radhakrishnan[2], Uma Devi Palanisamy[2], Kasthuri bai Magalingam[2], Reyhaneh Farghadani[2]

[1]Jeffrey Cheah School of Medicine and Health Sciences, Monash University Malaysia, Bandar Sunway, 47500, Selangor, Malaysia, [2]Food as Medicine, Jeffery Cheah School of Medicine and Health Sciences, Monash University Malaysia, 46150, Sunway, Selangor, Malaysia

Track: Research
Theme: Treatment

ABSTRACT

Introduction: Triple negative breast cancer (TNBC) is a highly aggressive and heterogeneous subtype of breast cancer that lacks targeted therapies. Tocotrienol-rich fraction (TRF), a vitamin E derivative, has demonstrated potent anticancer properties in both in vitro and in vivo models and is a promising therapeutic agent. However, its molecular mechanisms remain poorly understood. Meanwhile, long non-coding RNAs (lncRNAs) have emerged as critical regulators of various biological processes. While some studies have explored TRF's effects on microRNAs, the role of lncRNAs in mediating TRF's anticancer effects has not been investigated. While some studies have focused on TRF's effects on microRNAs, the potential roles of lncRNAs in mediating TRF's anticancer effects have not been investigated. Aims: This study investigates the regulatory roles of lncRNAs in TRF-treated TNBC cells. **Materials and Methods:** MDA-MB-468 cells were treated with TRF (17 µg/ml, 72 hours), and transcriptomic profiling was performed using the Clariom™D microarray. Differentially expressed genes were identified (fold change > 2, $p < 0.05$) and then used to construct co-expression lncRNA-mRNA pairs (Pearson's correlation, $|r| > 0.99$, $p < 0.05$). Functional enrichment of the co-expressed mRNAs was carried out using the Reactome Pathway database, and hub lncRNAs were identified using cytoHubba (Maximal Clique Centrality [MCC] algorithm). **Results:** TRF treatment significantly altered the expression of 530 lncRNAs (278 upregulated, 252 downregulated) in TNBC cells treated with TRF compared to untreated controls. Co-expression analysis revealed 5259 significant lncRNA-mRNA pairs, with enriched pathways including "Cell Cycle Mitotic", "Cell Cycle Checkpoints" and "DNA Replication". In addition, network analysis identified LINC00266-1 as a top hub lncRNA, correlating with 12 cell cycle genes (ANAPC11, CTNNB1, EXO1, FOXM1, KIF14, KIF23, KIF2C, MAPRE1, MCM2, PCNA, TPX2, ZWINT) **Conclusion:** Overexpression of LINC00266-1 is associated with the modulation of cell cycle related genes and TRF-induced cytotoxicity in MDA–MB–468 cells.

Keywords: Triple negative breast cancer, long non coding RNA, tocotrienols

PD-1/PD-L1 modulation by nivolumab and gamma-ray irradiation in a radioresistant EMT6 mouse mammary carcinoma model

Mohammad Johari Ibrahim[1], Nur Fatihah Ronny Sham[1], Narimah Abdul Hamid Hasani[1], Harissa Husainy Hasbullah[2], Wan Nor I'Zzah Wan Mohammad Zain[1], Suraya Othman[3], Nora Julianna Osman[3], Muhammad Khalis Abdul Karim[4], Syed Baharom Syed Ahmad Fuad[5], Nurhaslina Hasan[6]

[1]Department of Biochemistry & Molecular Medicine, Faculty of Medicine, Universiti Teknologi MARA, 47000, Sungai Buloh, Selangor, Malaysia, [2]Oncology Unit, Faculty of Medicine, Universiti Teknologi MARA, 47000, Sungai Buloh, Selangor, Selangor, Malaysia, [3]Department of Surgery, Faculty of Medicine, Universiti Teknologi MARA, 47000, Sungai Buloh, Selangor, Selangor, Malaysia, [4]Faculty of Science, Universiti Teknologi MARA, 47000, Sungai Buloh, Selangor, Selangor, Malaysia, [5]Department of Anatomy, Faculty of Medicine, Universiti Teknologi MARA, 47000, Sungai Buloh, Selangor, Selangor, Malaysia, [6]Faculty of Dentistry, Universiti Teknologi MARA, 47000, Sungai Buloh, Selangor, Selangor, Malaysia

Track: Research
Theme: Treatment

ABSTRACT

Radiotherapy resistance poses a significant challenge in breast cancer management, often leading to tumour recurrence and decreased patient survival. Contributing factors include epithelial-mesenchymal transition (EMT) and immune evasion, mechanisms by which tumours evade immune recognition. This study explores the involvement of immune evasion—specifically the PD-1/PD-L1 axis—in gamma-ray-induced radioresistance using a novel EMT6-derived radioresistant model (EMT6RR_MJI) in comparison to the parental EMT6 breast cancer cell line. In this study, mice were divided into two groups, each inoculated with either parental EMT6 cells or EMT6RR_MJI cells. Each group was further subdivided into four subgroups: 1 (control), 2 (gamma-ray irradiation), 3 (gamma-ray + nivolumab), and 4 (nivolumab alone). Subgroups 2 and 3 were treated with gamma rays at a dose of 2 Gy per cycle for eight cycles. All mice were sacrificed 5 days post-irradiation, and tumour sections were collected for analysis. The expression of PD-1 and PD-L1 was determined using qPCR, while PD-1 protein levels were analysed by Western blot and ELISA. In the parental EMT6 tumour model, tumour growth in subgroups 2 ($p<0.01$), 3 ($p<0.001$), and 4 ($p<0.01$) was significantly reduced compared to the control group. Additionally, PD-1 expression was higher in subgroup 2 ($p<0.05$) than in the control group. Notably, PD-1 protein expression increased in subgroup 4 ($p<0.05$) but decreased in subgroup 2 ($p<0.05$) compared to the control. In the EMT6RR_MJI tumour model, tumour growth in subgroup 3 was lower than in the control group ($p<0.001$). Furthermore, PD-L1 gene expression decreased in subgroups 2 and 4 compared to the control group ($p<0.05$). PD-1 protein expression was significantly reduced in subgroups 2 and 3 relative to the control ($p<0.05$). These findings suggest that PD-1 and PD-L1 contribute to the acquired radioresistance of EMT6RR_MJI tumours, highlighting their potential as therapeutic targets to improve radiotherapy outcomes in resistant breast cancer.

Keywords: Breast cancer, Radioresistance, Epithelial-mesenchymal transition (EMT), Nivolumab

From hospital to home: Developing and evaluating PiccoCare, a mobile applet for PICCs Self-Care among cancer patients in China

Xiaotian Huang, Norhasmah Mohd Zain, Azlina Yusuf

School of Health Sciences, Universiti Sains Malaysia, Kota Bahru, 16150, Kelantan, Malaysia

Track: Research
Theme: Survivorship

ABSTRACT

Introduction: Peripherally inserted central catheters (PICCs) are critical for cancer chemotherapy. Current patient education has created a gap in equipping patients with sustained self-management capabilities, necessitating evidence-based digital health interventions to provide better patient education. **Aims:** To develop and validate an home care-based education applet (PiccoCare) and evaluate its efficacy among cancer patients in the Sun Yat-sen University Cancer Centre (SYSUCC), China. **Materials and Methods:** The research employed a mixed-methods approach involved 2 phases. Phase 1 involved developing and validating PiccoCare by Delphi expert consultation. Phase 2 was a intervention study at SYSUCC, enrolling 138 patients randomised into intervention (n=69) and control (n=69) groups. **Results:** The developed PiccoCare contains 3 domains: catheter care, self-care, and resource support. Delphi consultation confirmed high content validity (mean CV=0.0331) and expert consensus (Kendall's W=0.255, p<0.01). The intervention showed PiccoCare had good usability (SUS score=73.46). Compared to the control group, the intervention group had significantly lower rates of objectively confirmed complications: infection (11.8% vs. 25.0%, p=0.046), thrombosis (8.8% vs. 25.0%, p=0.012), and catheter dislocation (10.3% vs. 25.0%, p=0.024). Self-management ability total scores increased in the intervention group (p<0.001), with improvements in subdomains like daily catheter observation (p=0.001) and maintenance compliance (p=0.008). Quality of life scores showed higher satisfaction (median=9 vs. 7, p=0.002) and reduced psychosocial distress, such as embarrassment (p<0.001) and illness reminders (p=0.003). **Conclusion:** PiccoCare is a valid, user-friendly intervention that effectively reduces PICC-related complications, enhances self-management ability, and improves quality of life. Future research should focus on multicenter trials, long-term outcomes, and integrating intelligent features to further optimize patient-centered PICC management.

Keywords: Peripherally Inserted Central Catheters (PICCs), Cancer Patients, Mobile Applet, Self-Management Ability, Continuity of Care

Plasma lipid profiling and identification of diagnostic lipid biomarkers for glioma patients

Khairunnisa Abdul Rashid, Wong Jennie Hsiu Ding, Norlisah Mohd Ramli, Kamariah Ibrahim

Department of Biomedical Imaging, Universiti Malaya, Medicine, Kuala Lumpur, 50603, Malaysia

Track: Research
Theme: Screening and Diagnosis

ABSTRACT

Introduction: Gliomas are the most aggressive primary brain cancers, frequently result in fatal outcomes and carry the poorest prognosis. Dysregulation in lipid metabolism was one of the factors contributing to the development and aggressiveness of glioma. Screening of plasma lipidome may alleviate the diagnosis of glioma and further improve prognosis and patient survival. **Objective:** This study aims to characterise the lipid composition in the plasma of glioma patients and identify potential lipid biomarkers that can differentiate glioma from other brain diseases. **Materials and Methods:** Plasma lipid compositions from 11 control individuals and 72 patients diagnosed with varying grades of glioma (comprising 26 low-grade gliomas, LGG, and 46 high-grade gliomas, HGG) were examined via liquid chromatography-mass spectrometry (LC-MS). The univariate and multivariate analysis techniques were employed to identify the differentially abundant lipids in plasma (significance $p<0.05$). A receiver operating characteristic (ROC) analysis was performed with values larger than 0.75, which were identified as potential lipid biomarkers. **Results:** The lipidomic analysis revealed elevated lipid composition, with 1171 and 1208 detected in LGG and HGG, respectively. Bioinformatics analysis revealed reduced in individual lipid subclasses, including fatty acyls, glycerolipids and phosphatidylcholine derivatives, whereas carnitine, ceramide and sphingomyelin were elevated in the plasma of glioma patients. Partial least squares-discriminant analysis (PLSDA) and heatmap demonstrated that glioma patient and control populations were visually separated by identified lipid biomarkers. Lipid metabolites, phosphatidylethanolamine (PE 21:3, AUC=0.862), ceramide-1-phosphate (CerP 26:1, AUC=0.861) and sphingomyelin (SM 24:3, AUC=0.858) were among the best lipids biomarkers in the plasma of glioma patients. **Conclusion:** Collectively, these lipidomic results unveil the aberrant and heterogeneous multiple lipid classes in the plasma of glioma patients. This research demonstrates that 11 lipid biomarkers show great potential for the non-invasive diagnosis of glioma with high throughput.

Keywords: Glioma, plasma lipidome, lipidomic, lipid biomarkers, mass spectrometry

Downstaging of advanced lung cancer: A case report on integrative targeted therapy, lifestyle modification, and psychosocial factors

Nelbon Giloi[1], Aldrin Jasper Placidus[2], Rachel Majuyah[3], Tin Tin Thein[4], Mei Ching Lim[5], Jac Fang Lim[6]

[1]Department of Public Health Medicine, Faculty of Medicine and Health Sciences, Universiti Malaysia Sabah, 88400, Kota Kinabalu, Sabah, Malaysia, [2]Department of Radiotherapy and Oncology, Sabah Women and Children's Hospital, 88996, Kota Kinabalu, Sabah, Malaysia, [3]Polyclinic Kingfisher, Kingfisher Plaza, 88450, Kota Kinabalu, Sabah, Malaysia, [4]Department of Pathobiology and Medical Diagnostic, Faculty of Medicine and Health Sciences, Universiti Malaysia Sabah, 88400, Kota Kinabalu, Sabah, Malaysia, [5]South Seberang Perai District Health Office, 14300, Nibong Tebal, Penang, Malaysia, [6]Society of Occupational and Environmental Medicine, 53000, Kuala Lumpur, Malaysia

Track: Medical Professionals
Theme: Treatment

ABSTRACT

Introduction: Advance-stage non-small-cell lung cancer (NSCLC) with EGFR mutations have been shown to respond well with third-generation tyrosine kinase inhibitors (TKIs) though tumour regression is rare. This case highlights the potential benefit of integrating targeted cell therapy, lifestyle changes and psychosocial intervention in a patient with stage IV NSCLC. **Case Presentation:** A 50-year-old male was diagnosed with stage IIIB EGFR-mutant NSCLC in July 2022 after a CT scan revealed two apical right lung lesions. He was started on Osimertinib as chemotherapy and radiotherapy were contraindicated. However, by November 2022, the disease had progressed to stage IV with malignant pleural effusion. The patient declined pleurodesis and instead adopted comprehensive lifestyle changes, switching to a whole-food, engaging in regular physical activity, practicing stress management, and drawing on faith-based coping strategies. Over 16 months, serial CT scans showed significant tumour regression, downstaging to approximately stage I–II by April 2024, alongside notable improvements in quality of life. **Discussion:** There is currently limited concrete evidence connecting the above to direct tumour regression despite suggestion by literatures that these traits may improve oncology patients' quality of life. Nonetheless, lifestyle modifications and psychological well-being may complement cancer treatments by promoting better immune function, lowering systemic inflammation, and improving adherence to treatment regimens. The significant tumour regression shown in this case was probably a result of a combination of factors, including the therapeutic effectiveness of Osimertinib, lifestyle changes and psychological health. The interaction between targeted therapy and holistic interventions in advanced non-small cell lung cancer requires more research. **Conclusion:** This example demonstrates the potential benefits of treating advanced non-small cell lung cancer (NSCLC) holistically, combining lifestyle and psychosocial therapies with targeted therapy. While individual cases do not establish causation, this highlights the need for more study into comprehensive cancer care strategies to improve patient outcomes.

Keywords: Non-small-cell lung cancer (NSCLC), EGFR mutation, osimertinib, lifestyle intervention, tumour regression

AI and viral oncology: Global trends and scientific landscape through a bibliometric lens

Chye Phing Teh[1], Tiong Yew Tang[2], Jack Bee Chook[1]

[1]Department of Biomedical Sciences, Faculty of Medical and Life Sciences, Sir Jeffrey Cheah Sunway Medical School (SJCMED), Sunway University, 47500, Bandar Sunway, Selangor, Malaysia, [2]Department of Smart Computing and Cyber Resilience, Research Centre for Human-Machine Collaboration (HUMAC), Sunway University, Faculty of Engineering and Technology, 47500, Bandar Sunway, Selangor, Malaysia

Track: Research
Theme: Screening and Diagnosis

ABSTRACT

Introduction: Approximately 13-20% of all cancers are attributable to carcinogenic infections. Seven of the eleven infectious agents classified as Group 1 human carcinogens by the International Agency for Research on Cancer (IARC) are viruses. The integration of artificial intelligence (AI) into biomedical research in recent years has opened new avenues for a deeper understanding of virus-induced cancers. **Aims:** This study aimed to map global research trends and the scientific landscape at the intersection of AI and viral oncology, focusing specifically on the seven IARC Group 1 oncogenic viruses: HPV, HBV, HCV, EBV, HTLV-1, KSHV, and HIV. **Materials and Methods:** A systematic search was conducted in the Scopus database to compile peer-reviewed publications in the interdisciplinary field of AI and viral oncology. We analyzed publication and citation metrics, research trends, keyword co-occurrence, and co-citation networks using Biblioshiny and VOSviewer. **Results:** The analysis comprises 522 articles published in 310 journals spanning from 1990 to 2025. Research applying AI in viral oncology was minimal until 2018 but has surged sharply thereafter, peaking at over 100 publications in 2024. Scientific Reports (24 articles), Cancers (13), and Frontiers in Immunology (11) were the leading journals in terms of publication frequency. The most productive institutions in the field were Fudan University (67 articles), Sun Yat-Sen University (65), and the US National Cancer Institute (64). Machine learning (including deep learning), hepatocellular carcinoma, HPV, and cervical cancer together accounted for 45% of all keyword occurrences, making them the most prominent research themes. Other emerging trend topics include biomarker, predictive modeling, and XGBoost. **Conclusion:** Our bibliometric study highlights an evolution toward AI applications in viral oncology research. While current efforts focus largely on disease prediction and diagnosis, these advancements lay the groundwork for future integration of AI into precision oncology for virus-associated malignancies.

Keywords: Artificial intelligence, viral oncology, oncovirus, cancer, bibliometric analysis

The barriers to colorectal cancer screening tests among adults attending Seremban health clinic in Negeri Sembilan, Malaysia

Pui Shi Chong[1], Htwe Htwe Sein[2], Melissa Ching Yee Lee[1], Sue May Tay[1], Naliena Reddy Kumaresan[1], Sonakshi Fernado[1], Zainal Fitri Zakaria[3], Sherreen Elhariri[4]

[1]MBBS, School of Medicine, IMU University, 70300, Seremban, Negeri Sembilan, Malaysia, [2]Department of Pediatrics, School of Medicine, IMU University, 86000, Kluang, Johor, Malaysia, [3]Klinik Kesihatan Seremban, 70300, Seremban, Negeri Sembilan, Malaysia, [4]Department of Surgery, School of Medicine, IMU University, 70300, Seremban, Negeri Sembilan, Malaysia

Track: Research
Theme: Screening and Diagnosis

ABSTRACT

Introduction: Colorectal cancer (CRC) is the second most common cancer in Malaysia, with most cases diagnosed at late stages, leading to poor survival. Stool-based screening methods, like the immunological faecal occult blood test (iFOBT), can reduce CRC mortality, but national uptake remains below 3%. This study explores barriers to CRC screening and their association with sociodemographic factors among adults aged 50 and above attending Seremban Health Clinic. **Materials and Methods:** A cross-sectional study was conducted in March 2025 at Seremban Health Clinic, Negeri Sembilan, involving adults aged 50 and above. Participants were selected through simple random sampling and completed a self-administered questionnaire adapted from the Scottish Bowel Screening Programme. The tool assessed sociodemographic data, barriers, and facilitators to CRC screening. Data analysis was performed using IBM SPSS version 28.0, with statistical methods including t-tests, ANOVA, Chi-square, and Spearman's correlation ($p<0.05$). **Results:** Psychological and informational barriers, such as fear, low confidence, and lack of knowledge, were more prominent than logistical ones. These barriers varied with sociodemographic factors: younger, working individuals cited time constraints; older participants expressed fatalism; those with lower education or unemployed faced greater emotional and practical challenges. Facilitators included belief in early detection, a sense of health responsibility, and encouragement from healthcare providers and family. Prior screening experience was linked to fewer barriers. **Conclusion:** Psychological and information barriers significantly hinder CRC screening uptake. Public health strategies should focus on increasing awareness, correcting misconceptions, and adopting community-based approaches to improve participation and reduce the CRC burden.

Keywords: Barriers to healthcare, colorectal neoplasms, health knowledge, early detection of cancer (mass screening)

Assessment of the association of infertility treatment with breast cancer risk in a tertiary referral hospital

Norlia Abdullah[1], Abdul Kadir Abdul Karim[2], Mohd Rizal Abdul Manaf[3], Farhana Raduan[1], Noor Lydia Nabila Kamlon[4], Nurfarazela Salamon[4], Rossnita Noor Marzuki[4]

[1]Department of Surgery, Faculty of Medicine, Universiti Kebangsaan Malaysia, 56000, Kuala Lumpur, Malaysia, [2]Department of Obstetrics & Gynecology, Faculty of Medicine, Universiti Kebangsaan Malaysia, 56000, Kuala Lumpur, Malaysia, [3]Department of Public Health, Faculty of Medicine, Universiti Kebangsaan Malaysia, 56000, Kuala Lumpur, Malaysia, [4]Department of Nursing, Faculty of Medicine, Universiti Kebangsaan Malaysia, 56000, Kuala Lumpur, Malaysia

Track: Medical Professionals
Theme: Screening and Diagnosis

ABSTRACT

Introduction: Infertility drugs may elevate oestrogen levels in women, potentially increasing their risk of developing breast cancer. However, the correlation between exposure to infertility drugs and breast cancer risk remains inconclusive. **Aims:** This preliminary study aims to assess whether there is an association between exposure to infertility treatment and the risk of developing breast cancer. **Materials and Methods:** This retrospective study consisted of women aged a minimum of 20 years who attended the breast clinic in our centre. Participants were categorized into four groups: women with breast cancer who had undergone infertility treatment (CI), women with breast cancer who had no infertility treatment (CNI), women without breast cancer who had undergone infertility treatment (NCI) and women without breast cancer who had no infertility treatment (NCNI). Demographic data, obstetric and gynaecological history and details of infertility treatment were recorded. **Results:** A total of 104 subjects were recruited; 65.3% Malays, 26.9% Chinese, 5.7% Indians & 1.9% Foreigners. Among them, 12.8% were CI, 87.2% were CNI, while 6.2% and 93.8% were NCI and NCNI respectively. Chi-square analysis with Continuity Correction showed no significant association between infertility treatment exposure and the diagnosis of breast cancer (p=0.418). There was also no association found between breast cancer and ethnicity, education level, marital status, breast-feeding, contraceptive use and family history of breast cancer. **Conclusion:** Based on this preliminary analysis, there appears to be no significant correlation between exposure to infertility treatment and breast cancer risk among women in our study population. **Limitations:** This study is limited by a small sample size, potential recall bias and incomplete data on the complexity and types of infertility treatment regimens that these women had undergone.

Keywords: Infertility, risk, developing, breast, cancer

Neoadjuvant tyrosine kinase inhibitor (Lenvatinib) for locally advanced papillary thyroid carcinoma: Early experience from a university hospital in Malaysia

Muhammad Safwan Abdullah, Mohd Helmi Mohd Samathani, Shahrun Niza Abdullah Suhaimi

Department of Surgery, Faculty of Medicine, Universiti Kebangsaan Malaysia, 56000, Kuala Lumpur, Malaysia

Track: Medical Professionals
Theme: Treatment

ABSTRACT

Introduction: Locally advanced papillary thyroid carcinoma (LAD PTC) with aerodigestive invasion poses significant surgical challenges. Invasive procedures often carry high morbidity, and complete resection may not be feasible at diagnosis. Tyrosine kinase inhibitors (TKIs), such as Lenvatinib, have shown efficacy in radioiodine-refractory thyroid cancer, but their role in the neoadjuvant setting remains underexplored, particularly in resource-limited environments. **Materials and Methods:** We present a case series of three female patients (ages 54–67) with biopsy- and imaging-proven LAD PTC (T4bN1bM0) treated with neoadjuvant Lenvatinib at Hospital Canselor Tuanku Muhriz, Universiti Kebangsaan Malaysia. All patients were discussed in a multidisciplinary team (MDT) meeting involving endocrine surgery, otolaryngology, oncology, and radiology. Each patient demonstrated extensive local invasion involving the trachea or oesophagus, with encasement of neck vessels. Lenvatinib was initiated as neoadjuvant therapy due to high surgical risk at presentation. **Results:** All three patients demonstrated partial tumour response on imaging after 3–6 months of TKI therapy, with improvement in obstructive symptoms. One patient was able to remove her percutaneous endoscopic gastrostomy (PEG) tube and resume oral intake. One patient's airway symptoms fully resolved. However, financial limitations prevented another patient from continuing TKI therapy, leading to tumour regrowth. Side effects such as diarrhoea, hypertension, SIADH, and hand–foot syndrome were observed but were manageable with supportive care. To date, none of the patients have undergone definitive surgery; one declined resection due to the extent of surgery required, and another awaits reassessment following extended TKI therapy. **Conclusion:** Our early experience suggests that Lenvatinib offers meaningful clinical and radiological responses in LAD PTC, potentially downstaging tumours to a resectable status. In resource-constrained settings, the high cost of TKI remains a major barrier. Larger prospective studies and funding support mechanisms are needed to define and enable the neoadjuvant role of TKI in advanced thyroid cancer.

Keywords: Papillary thyroid carcinoma, neoadjuvant therapy, tyrosine kinase inhibitors

Tumour infiltrating lymphocytes (TILs) and its association with breast carcinoma imaging characteristics at Sultan Ahmad Shah Medical Centre (SASMEC @IIUM)

Raihanah Haroon[1], Noor Khairiah Kamaludin[2], Khairunisa Ahmad Affandi[3], Mohd Radhwan Abidin[3], Karimah Hanim Abd Aziz[4], Siti Nor Suzeana Mustfar[3], Siti Kamariah Che Mohamed[3]

[1]Surgery, Kulliyah of Medicine, International Islamic University Malaysia (IIUM), 25200, Kuantan, Pahang, Malaysia, [2]Radiology, Kulliyah of Medicine, International Islamic University Malaysia (IIUM), 25200, Kuantan, Pahang, Malaysia, [3]Pathology, Kulliyah of Medicine, International Islamic University Malaysia (IIUM), 25200, Kuantan, Pahang, Malaysia, [4]Community Medicine, Kulliyah of Medicine, International Islamic University Malaysia (IIUM), 25200, Kuantan, Pahang, Malaysia

Track: Research
Theme: Screening and Diagnosis

ABSTRACT

Introduction: Purpose: Tumor-infiltrating lymphocytes (TILs) have gained recognition as a potential prognostic biomarker in breast cancer, particularly in aggressive subtypes. This study aimed to investigate the relationship between sonographic and mammographic imaging features and TILs levels in breast carcinoma patients treated at Sultan Ahmad Shah Medical Center (SASMEC), IIUM. **Materials and Methods:** A retrospective analysis was conducted on 121 breast carcinoma patients. Mammographic features; including breast density, mass shape, mass margins, mass density, calcifications, and stromal distortion, as well as sonographic features; including mass shape, mass margin, echo pattern, posterior acoustic features, calcifications, mass orientation and vascularity, were assessed and evaluated. TIL levels were measured from tissue samples and classified as low (<20%) or high (≥20%). Logistic regression analysis was employed to examine the correlation between the imaging features and TIL levels. **Results:** Tumors exhibiting posterior features on ultrasound were significantly associated with low TIL levels (p=0.020), with an adjusted odds ratio (AOR) of 3.428 for shadowing. This indicates that posterior shadowing is a significant predictor of low TILs levels in breast cancer patients. In contrast, other mammographic and sonographic imaging features showed no significant association with TILs levels. **Conclusion:** Posterior acoustic shadowing on ultrasound may serve as a non-invasive marker for assessing immune activity within breast tumors, particularly in aggressive subtypes.

Keywords: Breast cancer, tumour infiltrating lymphocyte, mammogram, ultrasound

Association of mammographic and sonographic findings with molecular subtypes among breast cancer patients in Sultan Ahmad Shah Medical Centre (SASMEC @IIUM), East Coast Malaysia

Raihanah Haroon[1], Fakhriah Aiman Md Baharuddin[2], Nor Ain Rabaiee[2], Karimah Hanim Abd Aziz[3], Siti Kamariah Che Mohamed[2], Siti Nor Suzeana Mustfar[2]

[1]Surgery, Kulliyah of Medicine, International Islamic University Malaysia (IIUM), 25200, Kuantan, Pahang, Malaysia, [2]Radiology, Kulliyah of Medicine, International Islamic University Malaysia (IIUM), 25200, Kuantan, Pahang, Malaysia, [3]Community Medicine, Kulliyah of Medicine, International Islamic University Malaysia (IIUM), 25200, Kuantan, Pahang, Malaysia

Track: Research
Theme: Screening and Diagnosis

ABSTRACT

Introduction: The main purpose of the study is to determine the association between mammographic and sonographic findings with molecular subtypes among breast cancer patients in SASMEC @IIUM. **Materials and Methods:** This cross-sectional study recruited a total of 152 breast cancer respondents. Retrospective reviews were conducted on patients' records (i-Pesakit) and PACS-RIS from April 2018 till April 2025 whereby background characteristics, molecular subtypes, mammogram and ultrasound features of breast cancer were studied. Analysis between background characteristics, mammogram and ultrasound features of breast cancer with the molecular subtypes was determined. **Results:** This study identified key imaging and clinical features associated with breast cancer molecular subtypes. Lesions with well-defined or obscured margins were significantly less likely to be luminal-type tumours (adjusted ORs=0.045 and 0.116, respectively), as were oval-shaped masses (adjusted OR=0.148, p=0.016). For HER2-enriched tumours, well- circumscribed margins strongly predicted this subtype (adjusted OR=21.252, p=0.005), as did the presence of calcifications on ultrasound (adjusted OR=4.782, p=0.016). In triple- negative breast cancer (TNBC), postmenopausal status increased the likelihood of diagnosis of over sixfold (adjusted OR=6.384, p=0.024), and posterior acoustic enhancement was a significant sonographic predictor (adjusted OR=6.819, p=0.003). Other mammographic and sonographic features did not show significant associations with molecular subtypes. **Conclusion:** Distinct imaging and clinical features are associated with different breast cancer molecular subtypes. These findings highlight the value of imaging in predicting molecular subtypes, guiding personalized treatment and potentially enhancing the diagnostic value of conventional breast imaging prior to the information obtained from the more definitive yet invasive tissue sampling

Keywords: Breast neoplasm, mammography, ultrasonography, molecular subtype, imaging features, triple negative breast cancer

Knowledge and health belief in cervical cancer screening among women aged 30-60 years in the responsible area of health promoting hospital, Mai Khao (Khoean) Sub-District, Thalang District, Phuket Province, Thailand

Uraiwan Krai Muranishi, Kewalin Monglay, Tasneem Mhusor

[1]Department of Public Health, Faculty of Science and Technology, Phuket Rajabhat University, 83000, Muang Phuket, Phuket, Thailand, [2]PCU Ban Langa, 90130, Jana, SongKha, Thailand

Track: Research
Theme: Prevention

ABSTRACT

This survey research aimed to study knowledge and health beliefs about cervical cancer screening among 71 women in aged 30-60 years who voluntary participated in Cervical Cancer Health Education Program in the responsible area of Health Promoting Hospital, Mai Khao (Khoean) Sub-district. This study used a simple sampling method by voluntary. The research questionnaire was checked quality by Index of Item Objective Congruence: IOC equal 1.00 and reliability test of knowledge part equal 0.75 and health belief part was 0.79. The data were analyzed by frequency, percentage, mean and standard deviation. The results showed knowledge and health belief about cervical cancer among samples were high level ($\bar{x}$=8.46, SD=1.79) and high level ($\bar{x}$=3.69, SD=0.50), respectively. There were 18.31% of women had been screened for cervical cancer and 81.69% of women had never been screened for cervical cancer in this study. 71.83% of women had high knowledge level and 28.17% of women had moderate knowledge level. Perceived severity of cervical cancer was highest level ($\bar{x}$=3.87, SD=0.19) and perceived barriers of cervical cancer screening was lowest level ($\bar{x}$=3.63, SD=0.50). Moreover, the research showed 98.59% of woman know about Pap smear however they taught this test could be done in provincial hospital (90.14%) and they believed that travel inconvenience is an obstacle to receiving cervical cancer screening services ($\bar{x}$=3.69, SD= 0.50). Leading to low rates of cervical cancer screening, Health Promoting Hospital in responsible area should motivated women for cervical cancer screening by sending health volunteer for invitations or using newly HPV self-screening test for new screening campaign.

Keywords: Cervical cancer, cervical cancer screening, knowledge, health belief, Phuket

Respiratory and functional resilience following prehabilitation in a colorectal cancer patient with post-operative microleak: A case study

Mazatulfazura Salim[1], Muhammad Syamil Shah Jehan[1], Hizami Amin-Tai[2]

[1]Department of Rehabilitation Medicine, Faculty of Medicine And Health Sciences, Universiti Putra Malaysia, 43400, Serdang, Selangor, Malaysia, [2]Department of Surgery, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, 43400, Serdang, Selangor, Malaysia

Track: Medical Professionals
Theme: Prevention

ABSTRACT

Introduction: Prehabilitation programs are increasingly implemented prior to colorectal cancer surgery, but their role in managing post-operative complications remains underexplored. This case study describes outcomes of a comprehensive prehabilitation program in a patient who developed an anastomotic microleak. **Case Presentation:** A 66-year-old Malaysian male with diabetes mellitus and dyslipidemia was diagnosed with hepatic flexure tumor (Stage T2N1A). The patient underwent a structured prehabilitation program focusing on cardiorespiratory endurance exercises, breathing exercises, and abdominal, core, and limb strengthening exercises prior to laparoscopic right hemicolectomy. Pre-operative assessments included respiratory function (Peak Expiratory Flow Rate, PEFR), functional capacity (Timed Up and Go test, TUG; one-minute sit-to-stand; six-minute walk test, 6MWT), and independence measures (Modified Barthel Index, MBI). Post-operatively, patient develop an anastomotic microleak requiring antibiotics. Despite this complication, his PEFR improved from 450 to 470 L/min, and his maintained his MBI score (100/100). The TUG increased from 10.48 to 7.01seconds. The 6MWT initially decreased from 400 to 369 metres in the immediate post operative period but improved significantly to 500 metres at 3 month follow up, surpassing his baseline by 25%. This improvement occured despite the anastomotic complication. Hospital stay was limited to 5 days. **Conclusion:** This case suggest that comprehensive prehabilitation with targeted exercises may confer resilience when surgical complications occur, potentially through creating physiological reserve that support recovery. The substantial improvement in exercise capacity at 3 month follow up indicates potential protective effects of prehabilitation. Larger prospective studies are needed to explore structured exercise prehabilitation program including optimal dosage and duration protocols, as a strategy to improve recovery when complications occur, particularly focusing on long term functional outcomes.

Keywords: Prehabilitation, exercise therapy, colorectal cancer

Differential gene expression study on colorectal cancer

Vijayan Manickam Achari[1], Hemajaasri Ramesh[1], Mogana Darshini Ganggayah[2]

[1]Institute of Biological Sciences, Faculty of Science, Universiti Malaya, 50603, Kuala Lumpur, Malaysia, [2]School of Business, Monash University Malaysia, 47500, Subang Jaya, Selangor, Malaysia

Track: Research
Theme: Screening and Diagnosis

ABSTRACT

Colorectal cancer (CRC) is the third most diagnosed cancer worldwide and the second leading cause of cancer-related deaths in both men and women in the United States. With economic development and rising living standards, the incidence of colorectal cancer has significantly increased in recent years, while the age of onset has decreased. This trend poses a serious threat to public health. A major contributing factor is the typically late diagnosis of CRC, which often results in poor prognosis and limited treatment options. Consequently, bioinformatics approaches, particularly those involving identifying differentially expressed genes (DEGs) and pathway enrichment analysis, hold great promise for improving early detection and treatment strategies. This study retrieved microarray datasets related to colorectal cancer from the GEO database and analysed them using R software to identify DEGs. Functional enrichment analysis was performed using Gene Ontology (GO) and the Kyoto Encyclopedia of Genes and Genomes (KEGG). A total of 407 DEGs were identified, including 98 upregulated and 309 downregulated genes, based on a p-value ≤ 0.05 and an absolute log2 fold change (log2FC) ≥ 2. GO analysis revealed that the DEGs were significantly enriched in biological processes, highlighting that CRC primarily disrupts essential physiological functions. Ten DEGs—CXCL1, CXCL2, CXCL3, CXCL5, CXCL8, PPBP, MT1F, MT1G, MT1H, and MT1M—were identified as potential diagnostic biomarkers. KEGG pathway analysis showed that six upregulated DEGs were involved in 13 of 21 enriched pathways, while four downregulated DEGs were associated with one of 30 pathways. These findings provide insight into the molecular mechanisms underlying CRC and may contribute to the identification of new therapeutic targets. Further studies are necessary to construct a gene interaction network model to deepen our understanding of these genes' relationships and to support the design of targeted drug therapies.

Keywords: Colorectal cancer, differentially expressed genes (DEGs), pathway enrichment (GO and KEGG), and biomarker identification, molecular mechanisms

Spontaneous umbilical colocutaneous fistula as initial presentation of sigmoid adenocarcinoma: A rare surgical challenge in advanced colorectal cancer

Anwar Ramli, Azmi Md Noor, Faisal Elagili, Nurshamizam Baharudin, M Yusof Sainal

Surgery, Kulliyah of Medicine, International Islamic University Malaysia, 25200, Kuantan, Pahang, Malaysia

Track: Medical Professionals
Theme: Treatment

ABSTRACT

Introduction: Colorectal cancer is among the top malignancies in Malaysia. Typical presentations include rectal bleeding, altered bowel habits, and obstruction. Spontaneous colocutaneous fistula is a rare manifestation, typically signifying advanced transmural disease. Umbilical fistulation secondary to sigmoid adenocarcinoma is exceptionally uncommon and presents significant diagnostic and surgical challenges. **Case Presentation:** A 61-year-old male presented with feculent discharge from the umbilicus, weight loss, and fatigue. Examination revealed a cachectic appearance, feculent umbilical fistula, and a palpable left iliac fossa mass. CT imaging showed a sigmoid colon tumor with anterior abdominal wall collection and a fistulous tract extending to the umbilicus. Laparotomy revealed a sigmoid mass with dense adhesions to small bowel and anterior wall, with a mature colocutaneous fistula. A diverting transverse loop colostomy was performed. Colonoscopy confirmed a near-obstructing sigmoid adenocarcinoma. The patient was referred for palliative chemotherapy. **Discussion:** Colocutaneous fistulas due to colorectal malignancy are rare and often indicate neglected or advanced-stage disease. A review of published literature highlights variability in fistula location and tumour pathology, with most requiring surgical control followed by individualized oncologic therapy. Umbilical presentation remains particularly rare. Prognosis depends on tumor burden, systemic status, and timeliness of intervention. Conclusion: This case illustrates a rare and dramatic presentation of advanced colorectal cancer. Awareness of such atypical manifestations is critical for timely diagnosis and management. A multidisciplinary approach including surgical control, oncologic evaluation, and nutritional support is key to optimizing outcomes. Further documentation is needed to guide evidence-based management in these rare scenarios.

Keywords: Colocutaneous fistulas, colorectal cancer, sigmoid colon tumor, left iliac fossa mass, palliative chemotherapy

Illuminating breast cancer survivorship with explainable AI: Insights from Malaysian breast cancer survivorship cohort

Mogana Darshini Ganggayah[1], Sarinder Kaur Dhillon[2], Tania Islam[3]

[1]School of Business, Monash University Malaysia, 47500, Subang Jaya, Selangor, Malaysia, [2]Department of Bioinformatics, Faculty of Science, Universiti Malaya, 50603, Kuala Lumpur, Malaysia, [3]Department of Surgery, Faculty of Medicine, Universiti Malaya, 50603, Kuala Lumpur, Malaysia

Track: Research
Theme: Survivorship

ABSTRACT

Breast cancer survivorship involves complex, long-term outcomes influenced by clinical, psychosocial, and economic factors. Conventional models often lack transparency, limiting their use in personalized care. Explainable artificial intelligence (XAI) offers interpretable insights that can enhance decision-making and guide survivorship planning. This study aims to conduct survivorship analysis of breast cancer patients using explainable AI models, with the goal of identifying important predictive features and generating personalized post-diagnosis guidelines for improved patient management. We used data from the Malaysian Breast Cancer Survivorship Cohort, which includes 17 structured domains such as demographic details, baseline clinical factors, psychosocial support (hospital anxiety and depression scale, stress thermometer), work-related status, complementary and alternative medicine use, and cost of treatment. Machine learning models (XGBoost, random forest, support vector machine) were trained to predict survivorship outcomes, including quality of life, return-to-work status, and emotional well-being. Feature importance was derived using SHAP (SHapley Additive exPlanations), enabling both global interpretability and individualized prediction explanations. The XAI models identified key predictors of survivorship outcomes, including emotional distress, availability of psychosocial support, work-related stress, fatigue, complementary and alternative medicine usage, and treatment-associated costs. Using SHAP (SHapley Additive exPlanations), the models offered transparent, patient-specific insights by quantifying the contribution of each feature to individual predictions. These interpretable outputs empower clinicians to design personalized interventions that address psychological well-being, financial strain, and social support, enhancing long-term patient care and recovery. Explainable AI enables transparent and actionable insights into the survivorship trajectories of breast cancer patients. By identifying key modifiable factors, this approach facilitates the development of patient-centered guidelines and supports collaborative, informed clinical decision-making. The methodology is scalable for broader applications in survivorship care and chronic disease management.

Keywords: Breast cancer survivorship, explainable artificial intelligence (XAI), Predictive modeling, shap analysis, personalized healthcare

Transforming pathology with GPT-4: Automated histopathological image analysis for enhanced disease diagnosis

Rajasegaran Sivaanandan[1], Sarinder Kaur Dhillon[2], Mogana Darshini Ganggayah[3], Weng Kuang Peng[4]

[1]Faculty of Science, Universiti Malaya, 50603, Kuala Lumpur, Malaysia, [2]Department of Bioinformatics, Faculty of Science, Universiti Malaya, 50603, Kuala Lumpur, Malaysia, [3]School of Business, Monash University Malaysia, 47500, Subang Jaya, Selangor, Malaysia, [4]Quantum Information and Quantum Biology, Quantum Information and Quantum Biology, Osaka University, 5650871, Yamadaoka, Suita, Osaka, Japan

Track: Research
Theme: Screening and Diagnosis

ABSTRACT

This study addressed longstanding challenges in traditional pathology reporting, such as high data volume, diagnostic delays, and interpretive variability, all of which hindered timely and accurate patient care. We investigated the transformative potential of Generative Pre-trained Transformer models, specifically GPT-4, and explored vision-language models (VLMs) to automate disease detection from high-resolution pathology images and streamline reporting workflows. The core objective was to enhance diagnostic accuracy, efficiency, and consistency, thereby improving patient outcomes and optimizing the workload of pathologists. To achieve this, we trained GPT-4 using a large, diverse dataset of breast cancer pathology images paired with verified clinical diagnoses. Model performance was rigorously evaluated using the independent BreakHis histopathological database from the University of Paraná, Brazil. Evaluation metrics included diagnostic accuracy, sensitivity, specificity, and precision in identifying various disease states. Additionally, GPT-4-generated pathology reports were assessed for clinical usability and comprehensiveness, with direct comparisons to reports produced by human pathologists. These evaluations focused on their effectiveness in supporting routine diagnostic workflows. The results demonstrated that GPT-4 could be effectively integrated into clinical practice, automating routine diagnostic tasks and allowing pathologists to focus on complex cases and quality assurance. This shift enabled faster and more accurate diagnoses, potentially leading to improved treatment outcomes. Furthermore, the model contributed to the automated quantification of histopathological features and showed promise in enhancing access to expert-level medical knowledge. Overall, this research advanced the application of intelligent AI solutions in pathology, aligning with the broader vision of "generalist medical AI." GPT-4 emerged as a powerful collaborative tool capable of supporting multimodal, comprehensive patient assessment in the future of healthcare.

Keywords: Digital pathology, GPT-4, vision-language models (VLMs), automated diagnosis, histopathological image analysis

Development and characterization of cisplatin and probiotic loaded suppositories for the management of cervical cancer

Amandeep Singh

Department of Pharmaceutics, ISF College of Pharmacy, Moga, 142001, Punjab, India

Track: Research
Theme: Treatment

ABSTRACT

Introduction: The work presented here showed the combined effects of an anticancer drug, cisplatin, along with probiotics(Lactobacillus rhamnosus) to circumvent the side effects associated with chemotherapy and to enhance the therapeutic effect. **Materials and Methods:** Suppositories with drug and probiotic were prepared by melt mold method using the blend of PEGs. The suppositories were characterized for various parameters. % Cell viability was performed by MTT assay. **Results:** and Discussion The free radical scavenging activity of Lactobacillus rhamnosus by NO assay was observed to be 60.77 µg/mL. The mean weight variation, melting time, content uniformity, friability and hardness of the prepared suppositories were 1.25± 0.025mg, 10.86 ± 0.64 min, 99.89±0.74, 0.25%, 2.2 kg/cm2. The release kinetics followed Peppas model. MTT assay presented that the formulation showed higher cytotoxicity when compared with plain cisplatin. Tumour regression displayed that formulation caused notable reduction in tumour volume. Histopathology studies demonstrated that the developed formulation is safe for local delivery of cisplatin. The cytotoxic action of the drug and probiotic-loaded formulation is quite high, which could be due to the antitumor effect of the probiotics. Biosurfactants released from the probiotic biomass might help in increasing the permeability and can result in an enhancement in in-vitro antitumour activity. **Conclusion:** This study provides the basis for a combination of local delivery approach along with the beneficial effects of a probiotic strain, which could help to resolve the problems caused by traditional chemotherapy.

Keywords: Probiotics, cisplatin, suppositories, local delivery, chemotherapy

The system starts here: Co-designing CRC screening from gaps to action in Selangor

Diane Woei-Quan Chong[1], Fathullah Iqbal Ab Rahim[1], Vivek Jason Jayaraj[3], Muhammad Fikri Azmi[4], Eliana Ahmad[5], Wilfred Kok Hoe Mok[6], Ahmad Shanwani Mohamed Sidek[1], Norfarizan Azmi[7], Rosaida Md Said[8], Rima Marhayu Abdul Rashid[9], Mohd Yasin Raja Abdullah[1], Muhammad Firdaus Md Salleh[10], Hamiza Shahar[11], Sondi Sararaks[12]

[1]Centre for Health Services Research, Institute for Health Systems Research, National Institutes of Health, 40170, Setial Alam, Selangor, Malaysia, [2]Centre for Health Equity Research, Institute for Health Systems Research, National Institutes of Health, 40170, Setial Alam, Selangor, Malaysia, [3]Digital Health Division, Ministry of Health Malaysia, 62590, Putrajaya, Malaysia, [4]Petaling District Health Office, Selangor State Health Department, Ministry of Health Malaysia, 47301, Petaling Jaya, Selangor, Malaysia, [5]Disease Control Division, Ministry of Health Malaysia, 62590, Putrajaya, Malaysia, [6]Department of General Surgery, Hospital Raja Perempuan Zainab II, Ministry of Health Malaysia, 40170, Shah Alam, Selangor, Malaysia, [7]Department of General Surgery, Hospital Tuanku Ja'afar, Ministry of Health Malaysia, 70300, Setemban, Negeri Sembilan, Malaysia, [8]Department of Medicine, Hospital Sultan Idris Shah, Ministry of Health Malaysia, 43000, Serdang, Selangor, Malaysia, [9]Family Health Development Division, Ministry of Health Malaysia, 62590, Putrajaya, Putrajaya, Malaysia, [10]Department of Medicine, Hospital Sultanah Aminah, Ministry of Health Malaysia, 80100, Johor Bahru, Johor, Malaysia, [11]Department of Medicine, Hospital Tengku Ampuan Rahimah, Ministry of Health Malaysia, 41200, Klang, Selangor, Malaysia, [12]Director's Office, Institute for Health Systems Research, National Institutes of Health, Ministry of Health Malaysia, 40170, Shah Alam, Selangor, Malaysia

Track: Research
Theme: Screening and Diagnosis

ABSTRACT

Colorectal cancer (CRC) screening is a public health strategy aimed at reducing late-stage diagnoses and improving survival. Despite a decade of rollout in Malaysia's public sector, its contribution to earlier detection remains limited. A recent evaluation, grounded in a health systems perspective, examined the performance of the CRC programme across 15 states. Key indicators included iFOBT coverage, positivity rates, colonoscopy compliance, and CRC detection yield. Three systems-level challenges were identified. First, while iFOBT coverage has improved over time, by 2022, fewer than 5% of the target population had ever been screened. States with higher population densities, such as Selangor and Johor, demonstrated smaller gains in coverage compared to less densely populated states. Second, colonoscopy compliance among iFOBT-positive individuals decreased nationally from 50.8% to 32.3%, with similar patterns across most states. In Selangor, compliance remained between 33.5% and 39.4% (2020–2022), following an earlier peak of 62.2% (2018). Third, these trends indicate that gains in iFOBT coverage are not consistently supported by corresponding colonoscopy compliance or reflected in CRC detection yield, resulting in missed opportunities for early-stage cancer detection. Collectively, these findings highlight system-level challenges in how different parts of screening pathway interact. Addressing care coordination, inter-facility linkages, and monitoring continuity presents an opportunity to strengthen CRC programme effectiveness. To support this, we are initiating a stakeholder engagement process to co-design a district-based coordination model in one of Selangor's districts. This effort aims to explore how public, private, and community actors might better coordinate CRC screening. The selected district–characterised by a diverse provider landscape, high population density, and active community networks–offers a setting for collaborative design. This preparatory phase focuses on stakeholder engagement, mapping coordination practices, and jointly shaping the proposed delivery model. Findings from this process will inform next steps toward a more integrated and responsive screening system.

Keywords: colorectal cancer, screening, health systems, co-design, stakeholder engagement

Patient perspective on cancer treatment experience at selected healthcare facilities

Mohammad Zabri Johari[1], Teresa Sui Mien Yong[1], Komathi Perialatan[1], Masitah Ahmad[1], Nor Haryati Ahmad Sanusi[2], Manimaran Krishnan[3]

[1]Centre for Health Communications and Informatics Research, National Institutes of Health Malaysia, Institute for Health Behavioural Research, 40170, Shah Alam, Selangor, Malaysia, [2]Centre for Risky Health Behavioural Surveillance Research, National Institutes of Health Malaysia, Institute for Health Behavioural Research, 40170, Shah Alam, Selangor, Malaysia, [3]Director's Office, National Institutes of Health Malaysia, Institute for Health Behavioural Research, 40170, Shah Alam, Selangor, Malaysia

Track: Research
Theme: Prevention

ABSTRACT

Cancer remains the second leading cause of mortality globally, with 9.6 million deaths reported in 2018. In Malaysia, it ranks fourth, accounting for 12.6% of deaths in government hospitals and 26.7% in private hospitals. Timely detection and diagnosis are critical for improving patient outcomes, especially in resource-constrained settings. This study explores the phenomenon of cancer treatment delays among patients in selected Malaysian hospitals, focusing on the contributing factors and lived experiences of those affected. A qualitative exploratory design grounded in phenomenology was employed across five hospital sites representing various healthcare levels and regions in Malaysia. In-depth interviews were conducted with 40 participants, guided by Andersen's Model of Total Patient Delay and Thaddeus and Maine's Three Delays Model. Thematic analysis was carried out through a rigorous, multi-stage coding process based on Lincoln and Guba's trustworthiness criteria. Delays were categorized across five phases: appraisal, illness, behavioural, scheduling, and treatment. Appraisal and behavioural delays were primarily patient-driven, linked to symptom misinterpretation, denial, and cultural beliefs. Scheduling and treatment delays were systemic, influenced by limited specialist access, miscommunication, operational disruptions due to COVID-19, and trust issues with healthcare services. Seven major themes emerged within treatment delay, including misdiagnosis and service fragmentation. Cancer care delays in Malaysia span both patient- and system-level barriers, with behavioural and treatment delays emerging as critical points for intervention. Strengthening early detection pathways and addressing trust and communication gaps within the healthcare system are essential for reducing avoidable morbidity and mortality.

Keywords: Cancer, delay, qualitative research, malaysia, health behaviour

Therapeutic potential of fucoxanthin in triple-negative breast cancer via Wnt/β-Catenin

Roshvin Pillai[1], Vinibha Illankovan[2], Manoj Kumar Karuppan Peruma[3], Dhivya Gandhi[4], Chinnaperumal Kamaraj[5], Vertriselvan Subramaniyan[6]

[1]Faculty of Medicine, MAHSA, 47130, Puchong, Selangor, Malaysia, [2]Center for Pre-University Studies, MAHSA, 47130, Puchong, Selangor, Malaysia, [3]Saveetha Medical College and Hospitals, Center for Global Health Research, 602105, Chennai, Tamil Nadu, India, [4]Bharath Institute of Higher Education and Research, Centre for Materials Engineering and Regenerative Medicine, 600073, Chennai, Tamil Nadu, India, [5]Interdisciplinary Research Department, SRMIST, 603203, Kattankulathur, Tamil Nadu, India, [6]Department of Medical Sciences, Faculty of Medical and Life Sciences, Sunway University, 47500, Bandar Sunway, Selangor, Malaysia

Track: Research
Theme: Treatment

ABSTRACT

Triple-negative breast cancer (TNBC) is a highly aggressive form of breast cancer associated with poor prognosis and limited treatment options. The Wnt/β-catenin signaling pathway plays a critical role in regulating cell survival, proliferation, and differentiation, and its dysregulation is closely linked to TNBC progression and metastasis. This study explores fucoxanthin (FX), a natural carotenoid from brown seaweed, as a potential therapeutic agent targeting the Wnt/β-catenin pathway in TNBC. FX demonstrates promising anti-cancer activities, including inhibition of tumor cell growth, induction of apoptosis, downregulation of key signaling components, and suppression of transcriptional activity. The compound also shows potential in overcoming chemoresistance and exerts anti-inflammatory and antioxidant effects. While preclinical results are promising, further clinical studies are essential to confirm its safety, efficacy, and optimal use in TNBC treatment.

Keywords: TNBC, Wnt/?-catenin, fucoxanthin, drug resistance, anticancer

Actors associated with financial coping mechanisms among cancer patients in klang valley

Yang Rashidi Abdullah[1], Mas Ayu Said[2], Sharifa Ezat Wan Puteh[3]

[1]Seremban District Health Office, Ministry of Health Malaysia, 70590, Seremban, Negeri Sembilan, Malaysia, [2]Social and Preventive Medicine, University of Malaya, Medicine, 50603, Kuala Lumpur, Wilayah Persekutuan Kuala Lumpur, Malaysia, [3]Public Health Medicine, Universiti Kebangsaan Malaysia, Medicine, 56000, Kuala Lumpur, Wilayah Persekutuan Kuala Lumpur, Malaysia

Track: Determinants of Health
Theme: Treatment

ABSTRACT

Introduction: Financial coping mechanisms (FCM) refer to any measures taken to shield families from financial crisis caused by certain conditions. This study investigated FCM in cancer patients, to determine its prevalence, the strategies for financial coping and its associated factors. **Materials and Methods:** This cross-sectional study was conducted in three Malaysian public hospitals namely Hospital Kuala Lumpur, Hospital Canselor Tuanku Muhriz and the National Cancer Institute using a systematic random sampling method to recruit 630 respondents from February 2020 to February 2021. A validated self-developed six domain questionnaire which includes one domain for FCM was used to collect the relevant data. **Results:** The monthly median income, household expenditure, healthcare expenditure, direct, and indirect health expenditures were RM3320 (IQR=3500), RM2587 (IQR=2466) and RM350 (IQR=441) respectively. The FCM level was 58.4%. The commonest type of FCM was using own savings. The bivariate analysis results show that FCM was significantly higher among respondents who are female 64.6% (p<0.001), in lower household income 62.8% (p=0.010), from urban areas 61.7% (p<0.001), had combination chemo-radiotherapy treatment 77.8% (p=0.038), had inpatient treatment 71.5% (p<0.001), with disability in the household 76.9% (p=0.015), with Catastrophic Health Expenditure (CHE) 65.0% (p<0.001) and without health insurance 68.3% (p<0.001). The logistic regression analysis identified significant predictors of FCM as female aOR 2.89 (95% CI 1.74–4.79), home in urban areas aOR 3.43 (95% CI 2.08–5.66), inpatient treatment location aOR 1.57 (95% CI 1.01–2.43), with disability in the household aOR 3.11 (95% CI 1.34–7.22), with CHE aOR 2.27 (95% CI 1.48–3.48) and without health insurance aOR 3.38 (95% CI 2.23–5.14). **Conclusion:** FCM is related to various socioeconomic and disease/ treatment factors. It is important to understand the prevalence, various types of FCM and their

Keywords: Financial coping, coping mechanisms, coping strategies, financial coping in cancer, financial coping mechanisms in cancer

Cross-sectional study about knowledge on warning signs and risk factors of two common cancer [colorectal and breast] among population of Maran, Pahang

Zuriyati Ramli

Pejabat Kesihatan Daerah Maran, Maran, 26500, Pahang, Malaysia

Track: Research
Theme: Prevention

ABSTRACT

Introduction: Breast and colorectal make up about half of the total cancer cases reported by the Malaysia National Cancer Registry. Understanding cancer awareness is important to tailor preventive efforts and reduce the cancer burden. The objective of this study was to assess of awareness and knowledge about 2 most common cancer [colorectal and breast] warning signs and risk factors in Maran, Pahang. **Materials and Methods:** A study was conducted among individuals aged 40 years who attended public health clinics under Maran District Health Office from 1st October to 31st October 2024. The respondents were assessed using Validated Awareness Beliefs about Cancer questionnaire. Collected data will be entered into and analyzed using the IBM Statistical Packages for Social Science (SPSS) Statistics software Version 27. **Results:** Altogether 450 subjects completed the questionnaire. It was shown low percentage of good knowledge for warning signs and risk factors among the respondents. A significant association between age groups, gender and education level with a level of knowledge on warning signs and risk factors was observed. **Conclusion:** The study revealed that awareness of cancer warning signs and risk factors among individuals aged 40 and above in Maran, Pahang, were inadequate. Age, gender, and educational attainment were highly correlated with knowledge levels. Customised health education initiatives targeting high-risk populations, including males, individuals with lower educational attainment, and older age groups, are essential for enhancing community cancer awareness and facilitating early identification.

Keywords: Cancer Awareness, level of knowledge, signs, symptoms, risks factor, Maran, Pahang

Harnessing stakeholder engagement through social and behavior change theory to promote community uptake of HPV vaccination: A qualitative study in Malaysia

Mohd Fadzrel Abu Bakar[1], Saunthari Somasundaram[1], Murallitharan Munisamy[1,2], Muhammad Adib Redzuan[3], Muhammad Izuddin Mohd Zali[4]

[1]National Cancer Society of Malaysia, 50300, Kuala Lumpur, Malaysia, [2]Faculty of Medical and Life Sciences, Sunway University, 47500, Petaling Jaya, Selangor, Malaysia, [3]Centre for Computer Science Studies, Universiti Teknologi MARA, 42300, Puncak Alam, Selangor, Malaysia, [4]Department of Public Health Medicine, University Malaysia Sabah, 88400, Kota Kinabalu, Sabah, Malaysia

Track: Determinants of Health
Theme: Prevention

ABSTRACT

Introduction: Low HPV vaccination uptake remains a key barrier to cervical cancer prevention, especially in underserved Malaysian communities. While technical solutions exist, behavioral and systemic factors often impede vaccine acceptance. This study explores the role of stakeholder engagement—framed within Social and Behavior Change (SBC) theory—in influencing community adoption of HPV vaccination. **Materials and Methods:** A qualitative design was used, involving focus group discussions with 30 purposively selected stakeholders, including government and community leaders and members from Perak, Pahang, and Kedah. Thematic analysis was guided by core SBC constructs: ideation, opportunity, and motivation. **Results:** Four key themes aligned with SBC domains were identified: Leadership Reduced Perceived Risk: Visible leadership, such as district officers publicly receiving the vaccine, built trust and reduced community fears, reinforcing vaccine safety. Accessible Information Increased Knowledge: Clear, targeted messages shared via WhatsApp and social media improved understanding of the vaccine's benefits, contributing to greater acceptance. Strategic Partnerships Expanded Reach: Collaboration between public and private sectors enabled broader and more effective community outreach, improving vaccine access and uptake. Narrative Framing Built Confidence: Pre-vaccination talks addressed doubts and clarified misconceptions, indicating hesitancy stemmed more from a lack of understanding than resistance. **Conclusion:** Grounded in SBC theory, this study underscores the critical role of leadership, information access, and multi-sectoral partnerships in shaping HPV vaccine uptake. Stakeholder-led, culturally tailored strategies can effectively address behavioral barriers and support scalable interventions for improved vaccine coverage in Malaysia and similar contexts.

Keywords: HPV vaccine, stakeholder engagement, behavior change, vaccination, Malaysia

Bridging the gap: Mammogram uptake patterns and the critical role of subsidies in expanding access among underserved women in Malaysia

Ashley Zulkapeli, Khoo Guat Suan

National Cancer Society of Malaysia, 50300, Kuala Lumpur, Malaysia

Track: Medical Professionals
Theme: Screening and Diagnosis

ABSTRACT

Introduction: Breast cancer remains the most common cancer among Malaysian women. Early detection through mammography significantly improves survival outcomes; however, access is uneven across socioeconomic groups. Government and NGO-funded subsidy programs aim to reduce financial barriers, particularly for the B40 and M40 populations. Objective: To evaluate mammogram uptake by payment type, age group, and patient status (new versus returning), and to assess the impact of subsidy programs on improving screening accessibility among socioeconomically disadvantaged women. **Materials and Methods:** A retrospective review was conducted of all mammograms performed in 2024 at a community-based screening clinic. Screenings were categorized by payment status (self-paid versus subsidized), age group and patient type (new versus returning). Subsidies were provided through multiple programs, including LPPKN, Etiqa, Perkeso, Estee Lauder, and Selcare. **Results:** A total of 5,797 mammograms were conducted during the study period. Among these, 236 (4.1%) were self-paid, predominantly by women from the T20 income group, with 104 new and 132 returning patients. The subsidized cohort comprised 5,561 mammograms (96.2%), including 3,484 new and 2,077 returning patients. Age distribution within the subsidized group was as follows: 40-49 years (1,186), 50–59 years (1,987), 60–69 years (1,770) and 70–79 years (618). Notably, women aged 40–59 accounted for 57% of subsidized screenings - a key demographic for early breast cancer detection. **Conclusion:** Subsidy programs are vital to ensuring equitable access to mammographic screening among Malaysia's underserved populations. The high proportion of subsidized screenings, particularly among first-time attendees from the B40 and M40 groups, underscores the importance of financial support in overcoming barriers to early detection. Continued investment and policy backing for these subsidy initiatives are essential components of Malaysia's national cancer control strategy and efforts to reduce disparities in cancer outcomes.

Keywords: subsidy programs, breast screening, Malaysia, mammogram uptake, health equity

Evaluating mobile imaging telemedicine for oral cancer screening: Economic insights from Malaysia

Sivaraj Raman[1], Asrul Akmal Shafie[2], Mannil Thomas Abraham[3], Shim Chen Kiong[3], Thaddius Herman Maling[4], Senthilmani Rajendran[5], Sok Ching Cheong[5]

[1]Centre for Health Economics Research, National Institutes of Health, Institute for Health Systems Research, 40170, Shah Alam, Selangor, Malaysia, [2]Discipline of Social and Administrative Pharmacy, Universiti Sains Malaysia, School of Pharmaceutical Sciences, 11800, Minden, Pulau Pinang, Malaysia, [3]Oral and Maxillofacial Surgery Department, Ministry of Health, Hospital Tengku Ampuan Rahimah, 41200, Klang, Selangor, Malaysia, [4]Samarahan Divisional Dental Office, Ministry of Health, Sarawak State Health Department, 94300, Samarahan, Sarawak, Malaysia, [5]Cancer Research Malaysia, 47500, Subang Jaya, Selangor, Malaysia

Track: Research
Theme: Screening and Diagnosis

ABSTRACT

Late-stage oral cancer remains a significant public health burden in Malaysia, with limited progress in early detection despite national screening initiatives. Contributing factors include limited access to specialists, low screening coverage, and diagnostic delays. The locally developed MeMoSA®—a mobile telemedicine platform that enables non-specialists to capture and transmit oral images for remote expert review offers a scalable, cost-effective solution to address these challenges. This study evaluated the economic return of MeMoSA® for oral cancer screening, compared to conventional opportunistic screening in public dental clinics. A Markov cohort model was constructed to simulate 100,000 adults aged 40 years over a 40-year time horizon. The model captured transitions across health states, from healthy to precancerous, and various cancer stages. A societal perspective was adopted, accounting for healthcare provider costs, patient out-of-pocket expenses, travel costs, and productivity losses. The primary outcome was quality-adjusted life years (QALYs), which incorporated patient survival and their quality of life (QOL). Cost and QOL data were derived from patient surveys and clinical records in two tertiary hospitals. Economic benefit was estimated using a willingness-to-pay threshold of MYR54,894 per QALY. Incremental net monetary benefit (INMB) was calculated by comparing total costs and economic benefits between MeMoSA® and conventional screening. MeMoSA® increased early detection by 41.3%, diagnosed 724 additional lesions, and yielded 600 more QALYs. Screening costs were reduced by MYR114,996 from lower reliance on referrals and in-clinic specialists. Although total societal costs rose by MYR2.28 million due to greater treatment uptake, MeMoSA® generated a positive INMB of MYR61.5 million. The cost-benefit crossover occurred at year 27, driven by improved QOL from earlier interventions. MeMoSA® has demonstrated its ability to enhance early detection, improve health outcomes, and generate long-term economic benefits. These findings highlight the value of early investment and support its integration into national oral cancer screening programs.

Keywords: Oral cancer, screening, cost-benefit, economic, detection

A case report study of late effect of radiotherapy in a nasopharyngeal carcinoma patient after 16 years of CRT

Wang Hooi Xian[1], Boon Seang Tan[2], Chee Peng Hor[1]

[1]Kepala Batas Hospital, Butterworth, 13000, Pulau Pinang, Malaysia, [2]Pantai Hospital Penang, Bayan Lepas, 11900, Pulau Pinang, Malaysia

Track: Medical Professionals
Theme: Survivorship

ABSTRACT

Introduction: Nasopharyngeal carcinoma (NPC) is the fourth most common cancer in Malaysia. This case highlights the complex clinical course of a young postpartum patient diagnosed with advanced NPC, emphasizing treatment outcomes and complications. Aim: To explore the long-term sequelae of 3D-CRT in a NPC patient. **Materials and Methods:** This is a retrospective case study. Clinical data were collected via review of the patient's medical records. All patient information was anonymized to ensure confidentiality. **Report:** This case reports a 33-year-old Malay woman who suffered from epistaxis, persistent headache and hearing loss during postpartum period in 2009. Biopsy of the tumour in left nasopharynx confirmed non-keratinizing squamous cell carcinoma. CT scan revealed an extensive mass in the nasopharynx extending to the cavernous sinuses, with bilateral nodal involvement (>6cm) and no distant metastasis (T4N3M0, Stage III). She was treated with 3D-conformal radiotherapy (3D-CRT), 66Gy/33 fractions delivered to neck, right and left lateral facial, 26 Gy/13 fractions to the anterior nose and 56 Gy/25 fractions to the anterior neck, with concurrent Cisplatin 30mg/m2. However, CT scan post treatment revealed residual disease, necessitating another 6 cycles of Cisplatin/Fluorouracil. Post radiotherapy, she encountered multiple complications, including significant oral sequelae such as xerostomia, gingivitis and gum atrophy. She also experienced trismus and osteoradionecrosis of bilateral temporomandibular joints, requiring regular morphine for pain management. Additionally, she suffered from persistent cerebrospinal fluid (CSF) rhinorrhoea, complicated by recurrent infections. Over the years, she underwent multiple biopsies and scans for suspected recurrence, all results remained negative. She was disease-free for 16 years but continued to endure significant long-term effects of 3D-CRT. **Conclusion:** This case underscores the long-term sequelae experienced by NPC survivor treated with 3D-CRT 16 years ago. Despite effective disease control, this patient faced chronic complications, underscoring the limitations of 3D-CRT in sparing adjacent normal tissues in comparison to intensity-modulated radiotherapy (IMRT).

Keywords: Nasopharyngeal carcinoma, 3D-CRT, late effect, osteoradionecrosis, CSF rhinorrhoea

Behind the clot: Atypical cerebral infarct as the manifestation of nasopharyngeal carcinoma—A case report of two rare presentations

Teo Sin Yee[1], Chuin-Hen Liew[2]

[1]Radiology Department, Hospital Tuanku Jaafar Seremban, 70400 Seremban, Negeri Sembilan, Malaysia, [2]Pediatrics Department, Hospital Tuanku Ampuan Najihah, 72000, Kuala Pilah, Negeri Sembilan, Malaysia

Track: Allied Health
Theme: Screening and Diagnosis

ABSTRACT

Introduction: Nasopharyngeal carcinoma (NPC) is a head and neck malignancy typically presenting with cervical lymphadenopathy, nasal and otologic symptoms. Cerebrovascular events in NPC are commonly attributed to post-radiotherapy complications. However, ischemic stroke as the manifestation of NPC is exceedingly rare. We report two rare cases where atypical ischemic cerebral infarct was the clinical presentation of undiagnosed NPC. **Case Description:** Both patients were adult males with vascular comorbidities, including diabetes mellitus, hypertension, and dyslipidemia. Each presented with acute altered mental status and hemiplegia. One had left ear pain with otorrhea and ipsilateral infra-auricular lymphadenopathy. Neurological evaluation of 1 patient revealed high NIH Stroke Scale scores (≥24). Non-contrast computed tomography (CT) and subsequent CT angiography and venography of the brain imaging of both cases showed large-vessel thrombosis in the internal carotid artery and cerebral infarctions in atypical regions (e.g., corpus callosum and internal border zones). Both cases demonstrated venous sinus thrombosis extending into the left internal jugular vein. Besides, both had radiological evidence of enhancing mass in the fossa of Rosenmüller with skull base erosion. Despite intensive care and mechanical ventilation, one patient died within four days of admission. **Conclusion:** These cases highlight an exceptionally rare but important manifestation of NPC presenting as atypical ischemic stroke. Clinicians and radiologists should maintain a high index of suspicion for skull base malignancy in patients with atypical infarct patterns or unusual vascular involvement, particularly adjacent to the fossa of Rosenmüller. Early utilization of CTA/CTV and careful assessment of skull base structures, even in non-contrast CT, are vital for timely diagnosis. These findings emphasize the need for multidisciplinary vigilance and suggest

Keywords: Nasopharyngeal carcinoma, ischemic infarct, computed tomography, atypical infarct, NPC

Community enforcement in action: A comparative study of JomLapor smoking violation reports in Penang and Terengganu (Jan–May 2025)

Mohd Ishak Abir, Wan Thung Chan, Thaarenee Wiswannadan

National Cancer Society of Malaysia, 50300, Kuala Lumpur, Malaysia

Track: Determinants of Health
Theme: Prevention

ABSTRACT

Introduction: Tobacco use remains a pressing public health issue in Malaysia. While enforcement of the Smoking Control Bill is primarily regulatory, community involvement plays an increasingly vital role. The JomLapor platform allows the public to report violations such as smoking in restricted areas, improper signage, and illegal sales. However, differences in reporting trends between states remain underexplored. **Objective:** To compare the type and frequency of smoking-related violations reported via JomLapor between a urban state, Penang and a rural state, Terengganu between January and May 2025, and to identify regional trends and enforcement gaps. **Materials and Methods:** A descriptive analysis was conducted using JomLapor data from Penang (n=82) and Terengganu (n=131). Reports were categorised into violations related to prohibited-area smoking, signage non-compliance, unlawful sales, advertising breaches, and others. The frequency and proportion of each category were analysed for both states. **Results:** Terengganu reported more violations (n=131) than Penang (n=82). In Penang, the most frequent violations were missing/outdated signage (26, 31.7%), smoking in restricted areas (16, 19.5%), and tobacco advertising (12, 14.6%). Terengganu recorded a broader range of issues: signage violations (55, 42.0%), prohibited-area smoking (20, 15.3%), and illegal sales at campuses, markets, or online (18, 13.7%). Lesser-reported categories in both states included underpriced tobacco sales and free sample promotions. **Conclusion:** The data show clear differences in reporting volume and violation types. Terengganu's higher and more varied reports may reflect stronger community vigilance or greater non-compliance. Penang's data suggest concentrated enforcement challenges in urban commercial areas. Tailoring enforcement strategies and public education efforts to state-specific patterns may enhance tobacco control outcomes nationwide. Strengthening community reporting tools like JomLapor remains key to improving accountability and compliance.

Keywords: Smoking Control Bill, community enforcement, tobacco reporting, public health, Community health

Who comes and who stays: Age-specific patterns and screening habits in a subsidized mammogram program in Malaysia

Ang Hong Shien

National Cancer Society of Malaysia, 50300, Kuala Lumpur, Malaysia

Track: Research
Theme: Prevention

ABSTRACT

Introduction: Mammogram screening plays a vital role in early breast cancer detection. While subsidized programs aim to improve access, understanding who utilizes them — and whether they return — is essential to optimizing outreach and program design, particularly in Malaysia where breast cancer incidence rates have been rising, especially among women starting from age 40. **Objective:** To analyze mammogram uptake by age group and examine first-time versus repeat screening patterns among underserved women enrolled in subsidized mammography programs in Malaysia. **Materials and Methods:** A retrospective review of 5,561 women screened under various subsidized mammography programs (LPPKN, ETIQA, ESTEE LAUDERS, PERKESO, SELCARE) in 2024, stratified by age groups (30-39, 40-49, 50-59, 60-69, 70-79, 80-89), and categorized by screening history (first-time vs repeat)1. **Results:** The highest uptake was in the 50-59 age group (n=1,987), followed by 60-69 (n=1,770) and 40-49 (n=1,171). Uptake was minimal in younger women aged 30-39 (n=14) and declined significantly beyond age 70 (70-79: n=617; 80-89: n=1). Overall, first-time screeners (n=3,484) outnumbered repeat participants (n=2,077), with new participant rates highest in programs like ETIQA (1,846 new vs 1,062 regular) and LPPKN (1,255 new vs 893 regular). The data suggests that while initial engagement is strong, sustained participation remains challenging across all age groups. **Conclusion:** Our findings reveal peak mammography utilization during the 50-69 age range, aligning with increased breast cancer risk in these age groups. However, the predominance of first-time over repeat screeners indicates suboptimal screening continuity. Given that breast cancer is the most common cancer among Malaysian women at 34.1%, targeted interventions are needed to improve long-term screening adherence and expand access to underrepresented age groups, particularly those under 40 and over 70 years.

Keywords: Prevention, mammogram, screening, follow ups, age

Relationship between nutritional status, body composition and quality of life among paediatric cancer patients at Hospital Tunku Azizah, Kuala Lumpur

Chin Yi Phang[1], Rahmat Farhana[1], Shu Chin Teh[1], Pei Teng Lum[1], Mohd Jamil Sameeh[1], Muda Zulaiha[2], C-Khai Loh[3], Jyh Eiin Wong[1,4], Rajikan Roslee[5], Bee Koon Poh[1,4]

[1]Centre for Community Health Studies (ReaCH), Universiti Kebangsaan Malaysia, Faculty of Health Sciences, 50300, Kuala Lumpur, Malaysia, [2]Department of Pediatrics, Hospital Kuala Lumpur, Hospital Tunku Azizah, 50300, Kuala Lumpur, Malaysia, [3]Pediatric Hematology and Oncology, Department of Pediatrics, Hospital Canselor Tuanku Muhriz UKM, 56000, Cheras, Kuala Lumpur, Malaysia, [4]Obesity-UKM Research Group, Universiti Kebangsaan Malaysia, 43600, Bangi, Selangor, Malaysia, [5]Centre for Healthy Ageing and Wellness (HCare), Universiti Kebangsaan Malaysia, Faculty of Health Sciences, 50300, Kuala Lumpur, Malaysia

Track: Allied Health
Theme: Treatment

ABSTRACT

Introduction: Advancements in paediatric oncology have led to markedly improved survival rates, broadening clinical scope towards enhancing quality of life and nutritional status of patients during treatment. This study aims to explore the association between nutritional status, body composition, and quality of life among paediatric cancer patients across early treatment stages. **Materials and Methods:** A longitudinal study was conducted involving 45 paediatric cancer patients aged 2 to 15 years, recruited via purposive sampling at Hospital Tunku Azizah, Kuala Lumpur. Nutritional assessments were performed at diagnosis, at two- and four-months post-diagnosis. Nutritional status was determined using BMI-for-age z-scores based on WHO Child Growth Standards with anthropometric measurements. Body composition was measured using bioelectrical impedance analysis method, while quality of life was assessed using Pediatric Quality of Life Inventory version 4.0 (PedsQL 4.0). **Results:** Majority of patients (57.8%) were classified as having normal BMI-for-age Z score, 13.3% were severely underweight, 8.9% underweight, 4.4% overweight and 15.6% obese. Quality of life scores across the treatment timeline were 68.7±17.3%, 70.6±16.9% and 64.0±19.8%, respectively, all falling under "sometimes affected" category. Among all domains, physical functioning consistently performed the lowest mean scores of 57.7±30.7%, 61.3±27.6% and 57.0±28.3%. A moderate positive correlation was observed between BMI-for-age z-scores and both total quality of life and physical health summary scores at diagnosis ($p<0.05$). Underweighted patients had lower physical health summary scores at diagnosis ($p<0.05$). Additionally, patients who experienced fat mass increments during two-months post-diagnosis period had lower total quality of life and psychosocial health summary scores at four-months post-diagnosis ($p<0.05$). **Conclusion:** Nutritional status and body composition were significantly associated with quality of life in paediatric cancer patients. These findings support incorporating body composition as part of nutritional monitoring, and revisiting the current nutrition and lifestyle intervention strategies to optimize nutritional status without reliance of fat mass as weight gain during treatment.

Keywords: Nutritional status, body composition, quality of life, paediatric cancer, longitudinal study

The role of BIRADS in predicting histopathology outcomes: A retrospective study of breast cancer screening at NCSM

Marie Pier[1], Tze Hui Soo[2]

[1]National Cancer Society of Malaysia, 50300, Kuala Lumpur, Malaysia, [2]Radiology Department, Faculty of Medicine, Universiti Putra Malaysia, 43400, Serdang, Selangor, Malaysia

Track: Allied Health
Theme: Screening and Diagnosis

ABSTRACT

Introduction: Breast cancer is a significant public health concern in Malaysia, with an incidence rate of 1 in 19 women. Early detection through screening programs, such as those offered by the National Cancer Society of Malaysia (NCSM), has been shown to improve survival rates and alleviate treatment burdens. NCSM provides breast biopsy services at an affordable and accessible cost, ensuring equitable access for women across all socioeconomic backgrounds. **Objectives:** This study aims to evaluate the diagnostic performance of the Breast Imaging Reporting and Data System (BIRADS) in predicting histopathology results, as well as to explore the sociodemographic factors influencing breast cancer detection, based on a single-center experience. **Materials and Methods:** A retrospective analysis was conducted on 108 patients who sought breast imaging at NCSM, with recommendations for breast biopsy based on the radiologist's clinical judgment. The BIRADS category and histopathological examination (HPE) result were retrieved from NCSM database. **Results:** The study identified a wide age range of patients who undergo breast biopsy, with the majority aged between 41-60 years. Chinese ethnicity was the most represented group. Of the 108 biopsy cases, 50 were confirmed positive by HPE. The majority of positive cases were in patients aged 41-80 years. The study found a statistically significant positive correlation between BIRADS category and HPE results ($p<0.05$), as determined by the chi-square test. **Conclusion:** The findings of this study demonstrate that the BIRADS system reliably predicts histopathological outcomes in breast cancer screening with a significant corelation. The need for increased screening efforts, particularly among women in key age groups and ethnic communities, should also be emphasized, aligning with NCSM's goal of improving breast cancer detection and ensuring equitable access to screening services.

Keywords: Breast cancer, breast screening, BIRADS, histopathological result, sociodemographic factors

Factors Influencing the willingness and ability to return to work by cancer survivors in Malaysia

Sathiya Vani Subramaniam[1,2], Petrolina Joseph[3]

[1]National Cancer Society of Malaysia, 50300, Kuala Lumpur, Malaysia, [2]Social And Preventive Medicine, Faculty of Medicine, University Malaya, 50603, Kuala Lumpur, Malaysia, [3]Business, Tun Razak, Business Admin, 53300, Kuala Lumpur, Malaysia

Track: Allied Health
Theme: Survivorship

ABSTRACT

With rising cancer survival rates in malaysia, returning to work has become a key part of recovery for many survivors. This study explores the factors that influence the willingness and ability of cancer survivors in malaysia to return to work after completing treatment. As cancer survival rates increase due to advancements in early detection and medical care, survivors face new challenges related to employment reintegration. A quantitative research design was employed, using structured bilingual questionnaires completed by 199 cancer survivors across malaysia. The data were analyzed using descriptive statistics and univariate inferential statistics. Findings revealed that psychological distress, particularly anxiety, depression, and fear of recurrence significantly reduced survivors' willingness to return to work ($p<0.05$). Conversely, higher levels of work-related self-efficacy and emotional support from family were positively associated with rtw willingness. Regarding ability, physical symptoms such as fatigue, cognitive impairments (commonly known as "chemo brain"), and lingering treatment side effects were significantly associated with lower ability to work ($p<0.05$). Social support from employers, availability of workplace accommodations, and financial necessity were found to be strong enablers for both willingness and ability to returns. However, the absence of a national return-to-work policy for cancer survivors in malaysia, combined with limited vocational support services, exacerbates the difficulties faced by this population. The study recommends the development of integrated return-to-work programs, employer education on cancer survivorship, flexible workplace arrangements, and expanded survivorship care that includes vocational guidance and psychosocial support. In conclusion, this research highlights the multidimensional challenges faced by malaysian cancer survivors and calls for coordinated efforts among stakeholders to ensure a smoother and more inclusive return- to-work process that supports survivors' dignity, productivity, and quality of life.

Keywords: Willingness, ability, cancer survivor, employment, return to work

Understanding caller behaviour and service needs: A profile-based analysis of CIS enquiries in 2024

Chen Kai Xin, Nurul Atiqah Zulkefli

National Cancer Society of Malaysia, 50300, Kuala Lumpur, Malaysia

Track: Allied Health
Theme: Screening and Diagnosis

ABSTRACT

Introduction: Making informed decisions in cancer care involves more than simply receiving information. Patients and caregivers require guidance in understanding possible outcomes, evaluating them in light of their values, and managing concerns that often arise throughout the cancer journey. The Cancer Information Service (CIS) serves as a key access point for the public to obtain trusted information and support services related to cancer prevention, screening, treatment, and survivorship. Most individuals contact the helpline with specific enquiries such as symptoms, screening, or treatment, while others seek general health information out of curiosity or concern. **Aim:** To examine the relationship between the type of enquiries among the general public and the cancer-affected community in 2024, to improve service delivery and resource allocation. **Materials and Methods:** A quantitative, descriptive cross-tabulation analysis was conducted to compare enquiry types across caller profiles in 2024, identifying patterns in information-seeking behaviour to record targeted services provided. **Results:** In 2024, CIS received a total of 6,126 enquiries, with the general public contributing the most (4,155), followed by patients/survivors (1,583) and caregivers/family (388). The majority of enquiries (3,575) were cancer-related services, particularly from the general public (2,403), reflecting strong demand for cancer screenings and vaccination information. Patients/survivors were also actively seeking both cancer-related services(1,136) and cancer-related (439) knowledge. Caregivers primarily enquired about cancer-related concerns (349). General enquiries remained low across all profiles. **Conclusion:** These findings reinforce CIS's position as a reliable source of cancer information and emphasize the importance of continuing to provide targeted services not only for patients but also for their caregivers, who are integral to the cancer care journey. Continued targeted services are essential. Future studies should compare trends across years to further explore CIS's evolving impact on the cancer-affected community.

Keywords: Cancer screenings, caller profiles, health-seeking behaviours, cancer helpline, cancer information services

Regional determinants of HPV vaccine implementation in Malaysia: A cross-sectional analysis from the “leaving no one behind 1.0” programme (Jan 2024–Jan 2025)

Vignesvari Subramaniam

National Cancer Society of Malaysia, 50300, Kuala Lumpur, Malaysia

Track: Medical Professionals
Theme: Prevention

ABSTRACT

Introduction: The HPV vaccine is a proven preventive measure against cervical cancer, but uptake in Malaysia remains uneven due to regional and contextual disparities. The Leaving No One Behind (LNOB) 1.0 programme aimed to address this by delivering HPV vaccines to underserved populations aged 13–20 across all 222 parliamentary constituencies from January 2024 to January 2025. **Objective:** To identify regional factors influencing HPV vaccine uptake and assess barriers and enablers to delivery. **Materials and Methods:** A cross-sectional analysis was conducted using data from the National Cancer Screening Registry, NCSM-MOH vaccination records, stakeholder interviews, and regional vaccination reports. Doses were distributed as follows: • West Malaysia (137,400 doses; 45.8%): Uptake driven by strong healthcare infrastructure (30%), ease of access (25%), health literacy (20%), digital systems (15%), and stakeholder engagement (10%). • East Malaysia (76,800 doses; 25.6%): Uptake limited by geographical barriers (35%), financial constraints (25%), limited facility access (20%), reliance on mobile teams/NGOs (15%), and language gaps (5%). • East Coast (27,900 doses; 9.3%): Sociocultural resistance due to religious concerns (40%), misconceptions (30%), lack of education campaigns (20%), and minimal female-focused health outreach (10%). **Conclusion:** HPV vaccine implementation in Malaysia is shaped by regional disparities in infrastructure, access, and sociocultural context. Tailored communication, outreach, and logistics strategies are essential. LNOB 1.0 offers a replicable model for equitable immunisation in Malaysia and comparable South Asian contexts.

Keywords: HPV vaccine, Malaysia, regional disparities, vaccine uptake, cervical cancer, LNOB 1.0, immunisation strategy

Assessing the understandability and actionability of the english BEAUTY booklets among malaysian audiences Using PEMAT-P

Janese Wong[1], Kavinash Loganathan[1], Ssarvinna Haran Manoharan[1], Nur Athirah Syazwani Mohd Hasri[1], Aisyahasannah Sulaiman[1], Thaarenee Wiswannadan[1], Jessica Anne Canute[1], Wan Thung Chan[1], Mandy Thoo1, Saunthari Somasundaram[1], Murallitharan Munisamy[1,2]

[1]National Cancer Society of Malaysia, 50300, Kuala Lumpur, Malaysia, [2]Faculty of Medical and Life Sciences, Sunway University, 47500, Petaling Jaya, Selangor, Malaysia

Track: Determinants of Health
Theme: Prevention

ABSTRACT

Introduction: The health literacy in Malaysia falls short of sufficient - there is low awareness and literacy of cancer symptoms and risk factors which warrants the need for better and more accessible cancer educational materials. The 'Bringing Education And Understanding To You (BEAUTY)' is an initiative that attempts to address the low cancer literacy rates in Malaysia, comprising 13 multilingual educational booklets on cancer symptoms and risk factors. The aim of this study is to evaluate the understandability and actionability of the English BEAUTY booklets utilising the Patient Education Materials Assessment Tool for Printable Materials (PEMAT-P) among the Malaysian audience and to investigate any differences between age groups. **Materials and Methods:** A sample of 152 Participants aged 18 to 65 were included in the study. They were presented with 12 booklets sequentially. After reviewing the content of each booklet, the participants were required to evaluate the booklet through the PEMAT-P questionnaire. A PEMAT score of higher than 70% indicates adequate understandability and actionability. Kruskal-Wallis test was done to investigate differences in PEMAT-P scores for each booklet between the 18-24 (n=105), 25-34 (n=21), 35-45 (n= 11) and 45+ (n=15) age groups. **Results:** Approximately half the study population was Chinese (50.3%) and the majority were in the 18-24 age group (69.1%). All English booklets (n=13) scored above 90% in understandability (M= 95.43%, SD=1.05) and actionability (M= 96.53%, SD = 0.694). Kruskal-Wallis test revealed no significant difference in understandability and actionability scores of all booklets between the age groups. **Conclusion:** The 13 English educational booklets on cancer symptoms and risk factors are effective education materials, even when administered to various age groups in this study. Further investigation should be done on the booklets in other languages and whether other socioeconomic factors influence PEMAT-P scores.

Keywords: Cancer awareness, health literacy, cancer education, PEMAT-P, health information accessibility

Uncovering lifestyle gaps in cancer risk: A focus on body weight and movement

Ssarvinna Manoharan Haran[1], Janese Wong[1], Kavinash Loganathan[1], Nur Athirah Syazwani Mohd Hasri[1], Aisyahasannah Sulaiman[1], Thaarenee Wiswannadan[1], Jessica Anne Canute[1], Wan Thung Chan[1], Mandy Thoo1, Saunthari Somasundaram[1], Murallitharan Munisamy[1,2]

[1]National Cancer Society of Malaysia, 50300, Kuala Lumpur, Malaysia, [2]Faculty of Medical and Life Sciences, Sunway University, 47500, Petaling Jaya, Selangor, Malaysia

Track: Determinants of Health
Theme: Screening and Diagnosis

ABSTRACT

Introduction: Body Mass Index (BMI) and Physical activity are key lifestyle indicators that are associated with the risk of developing non-communicable diseases (NCDs) including cancer. Early identification of these risk factors through community engagements are essential for prevention strategies. Health screening booths conducted by National Cancer Society Malaysia (NCSM) offer an accessible platform to educate the public and collect data on preventive health indicators. **Objective:** To determine the BMI and physical activity levels among individuals who participated in cancer risk assessments at NCSM health screening booths and community events and public exhibitions from 2023 to 2024. **Materials and Methods:** A cross-sectional cancer risk assessment was conducted at health screening events and public educational booths organized by NCSM. Participants completed a self-administered digital questionnaire via a QR code on their mobile devices. The survey captured lifestyle related cancer risk factors and demographic data. Descriptive analysis, Multivariate analysis of variance (MANOVA) and post-hoc tests were conducted using SPSS. **Results:** Out of 1,000 participants in the cancer risk assessments, 63% were classified as overweight or obese and 41% reported as low levels of physical activity. MANOVA revealed significant effects of age group ($p < 0.001$) and ethnicity ($p = 0.003$) on the combined outcomes of BMI and physical activity levels. Higher BMI was observed among older individuals ($p < 0.001$). Post hoc test reported 10-20 years and 21-30 years had a significant low BMI. Physical activity levels did not vary significantly by gender or ethnicity. However, a significant age-related difference was observed in 61-70 years reported significantly lower physical activity levels ($p=0.004$). **Conclusion:** BMI varied significantly across age groups and ethnicity revealing key demographic trends in lifestyle related cancer risk while physical levels remained uniformly low. NCSM screening booths are essential in identifying at-risk individuals and supporting national prevention efforts.

Keywords: Cancer risk assessment, body mass index, physical activity, lifestyle factors, non-communicable diseases

Promoting preventive health behaviors through multilingual digital cancer education: Lessons from the BEAUTY programs

Aisyahasannah Sulaiman[1], Ssarvinna Manoharan Haran[1], Janese Wong[1], Kavinash Loganathan[1], Mohd Ishak Abir[1], Nur Athirah Syazwani Mohd Hasri[1], Puteri Sakinah[1], Thaarenee Wiswannadan[1], Jessica Anne Canute[1], Wan Thung Chan[1], Mandy Thoo[1], Saunthari Somasundaram[1], Murallitharan Munisamy[1,2]

[1]National Cancer Society of Malaysia, 50300, Kuala Lumpur, Malaysia, [2]Faculty of Medical and Life Sciences, Sunway University, 47500, Petaling Jaya, Selangor, Malaysia

Track: Determinants of Health
Theme: Prevention

ABSTRACT

Cancer education remains a sensitive topic in Malaysia, where public awareness of the disease and its symptoms is limited. The country's multicultural and multilingual population further complicates health communication, especially on less openly discussed subjects like cancer, leading to delayed diagnoses and poor health-seeking behaviors. Addressing this gap, the National Cancer Society Malaysia (NCSM), in partnership with the MMA Public Health Society, Asia Cancer Forum, NCD Malaysia, and supporting partner Astellas, launched the Bringing Education and Understanding To You (BEAUTY) program. This initiative produced 44 cancer-related videos distributed exclusively on YouTube in Malay, English, Mandarin, and Tamil. Each video incorporates cultural context to enhance understanding, highlighting cancer signs, symptoms, and prevention, while also addressing emotional and behavioral factors to encourage preventive action. One year post-launch, YouTube analytics were used to evaluate audience engagement and reach. Results showed that English-language videos garnered the highest viewership, with breast, cervical, and blood cancer videos leading in total views. Notably, the English video on Nasopharyngeal Cancer recorded the highest click-through rate (CTR) at 9.46%, while Malay-language videos on smoking and lung cancer followed with CTR of 4.93% and 4.79%, respectively. Tamil and Mandarin videos received the highest impressions, indicating strong visibility despite relatively lower CTRs. These insights reveal that while English content draws broad engagement, other language groups exhibit meaningful interaction, emphasizing the importance of language inclusivity in public health. The BEAUTY program demonstrates that multilingual, culturally tailored digital education can be a powerful tool and guide future communication strategies to improve cancer awareness across Malaysia's diverse population.

Keywords: Cancer education, cancer awareness, public health malaysia, multilingual health communication, digital health education

Analysing the reach and engagement of cancer-related educational posts on instagram: Insights from NCSM's 2024 educational posts

Nur Athirah Syazwani Mohd Hasri[1], Aisyahasannah Sulaiman[1], Ssarvinna Manoharan Haran[1], Janese Wong[1], Kavinash Loganathan[1], Mohd Ishak Abir[1], Puteri Sakinah[1], Thaarenee Wiswannadan[1], Jessica Anne Canute[1], Wan Thung Chan[1], Mandy Thoo[1], Saunthari Somasundaram[1], Murallitharan Munisamy[1,2]

[1]National Cancer Society of Malaysia, 50300, Kuala Lumpur, Malaysia, [2]Faculty of Medical and Life Sciences, Sunway University, 47500, Petaling Jaya, Selangor, Malaysia

Track: Determinants of Health
Theme: Prevention

ABSTRACT

Introduction: Cancer remains to be a public health burden in Malaysia. The Department of Statistics Malaysia (2023) stated that cancer is among the top ten principal causes of death. Furthermore, the Malaysia National Cancer Registry Report (MNCR) showed that the percentage of cancer cases detected at late stages (Stage III and IV) increased from 63.7% (2012–2016) to 65.1% (2017–2021). This suggests a limited cancer literacy among the public. Cultural stigma, misinformation, and fear further hinder open discussions and early detection. In response, the utilisation of social media, particularly Instagram as an educational platform can reduce the gaps. National Cancer Society Malaysia (NCSM) actively utilises Instagram to publish educational (Edu) posts to promote cancer literacy, early detection, and healthy lifestyle practices. **Objectives:** This study aims to determine which types of Edu posts including General Infographics, Diet/Nutrition, Cancer Helpline, or Mental Health garnered the highest reach, and to identify which months recorded the highest engagement on Instagram throughout 2024. **Materials and Methods:** Instagram analytics data from January to December 2024 were analysed. The top Edu posts for each month were categorised based on content type. Data on reach, impressions, interactions, gender, and age were collected and compared. **Results:** Based on 12 posts, 7 were General Infographics and 5 were Diet/Nutrition posts. General posts had a higher average reach (5013) as compared to Diet/Nutrition posts (4223). The highest reach was observed in December (8288), followed by February (6616) and October (5728) potentially due to alignment with awareness themes such as Pink October. Across all months, women were the major audience, with the engagements ranging from 68.3% to 79.3%, primarily within the 25–34 age group. **Conclusion:** Both content type and timing influenced reach. General Infographic and awareness month-aligned posts showed a better performance. These insights can be further utilised to improve engagements in order to reach

Keywords: Cancer literacy, health communication, cancer awareness, digital health promotion, social media strategy

Assessing the feasibility and impact of a hospital-based psychosocial support: A one-year review of the psycho-oncology clinic

Jefferson Ng Khai-Quan[1], Murallitharan Munisamy[1,2]

[1]National Cancer Society Of Malaysia, 50300, Kuala Lumpur, Malaysia, [2]Faculty of Medical and Life Sciences, Sunway University, 47500, Petaling Jaya, Selangor, Malaysia

Track: Allied Health
Theme: Treatment

ABSTRACT

Psychological distress remains a prevalent yet under-recognized issue in cancer care, often limited by the access to structured mental health services and overshadowed by the biomedical focus within the local hospital systems. The absence of psychological support contributes to reduced quality of life, treatment non-adherence, and poorer clinical outcomes among persons affected by cancer. The Psycho-Oncology Clinic was established to address this service gap. This study aimed to assess the feasibility of the clinic over its first year of operation at Hospital Kuala Lumpur. Feasibility was assessed across four domains: recruitment capability, retention rate, resource requirements, and outcome measures using the Distress Thermometer (DT) and Kessler Psychological Distress Scale (K10). A total of 135 patients were referred to the clinic, with 89 (65.9%) engaging in at least one session. Among them, only 7% discontinued the intervention prematurely, indicating good retention. The average wait time from referral to first session was 1.8 days. Services were delivered by a mental health team consisting of three clinical psychologists and two counselors, reflecting moderate resource use and efficient service coordination. Significant reductions in psychological distress were observed. DT scores decreased from a mean of 8.4 (SD=2.5) to 2.6 (SD=1.4), while K10 scores dropped from 38.4 (SD=3.9) to 14.7 (SD=2.3) post-intervention. Findings suggest that the Psycho-Oncology Clinic is feasible and effective within a hospital setting, supported by acceptable recruitment and retention rates, manageable resource requirements, and improved psychological outcomes. These results demonstrate the potential for sustainable psychosocial service integration in oncology care. Further longitudinal and cost-effectiveness studies are recommended to inform broader implementation and policy development.

Keywords: Psycho-oncology, healthcare integration, feasibility study, psychosocial support, patient care

Bridging the gap: Optimizing psychosocial support for cancer-affected youth

Eunice Chan Xiou Zhi1, Jefferson Ng Khai-Quan[1], Murallitharan Munisamy[1,2]

[1]National Cancer Society of Malaysia, 50300, Kuala Lumpur, Malaysia, [2]Faculty of Medical and Life Sciences, Sunway University, 47500, Petaling Jaya, Selangor, Malaysia

Track: Allied Health
Theme: Treatment

ABSTRACT

Understanding support determinants in middle childhood and adolescence presents unique challenges distinct from early childhood. Younger children benefit from direct familial support and simpler emotional needs, whereas youths experience transitions marked by increasing autonomy, complex self-concepts, and heightened sensitivity to external judgments. In childhood cancer, these dynamics provoke internalizing behaviours as patients attempt to maintain a facade of resilience to avoid being perceived as inadequate. This further exacerbates vulnerability and hinders effective engagement in psychosocial support. This study explores the unmet psychosocial needs of youths with cancer and outlines adaptive support strategies for patients and families. It draws on insights from five case studies involving patients supported at the National Cancer Society Malaysia. Data were collected through qualitative caregiver interviews and direct behavioural observations of patients to identify recurring psychosocial themes and inform the implementation of targeted psychosocial interventions. Emergent themes included self-blame, guilt, anxiety over uncertainty, and grief for lost autonomy. Targeted interventions were implemented based on these insights, focusing on rapport-building, behavioural activation strategies, and holistic family care. Findings indicated that enhanced metacognitive and moral reasoning capacities underscored the importance of rapport-building to foster receptivity and sustained engagement with psychosocial care. Facilitating involvement in minor decision-making enhanced autonomy, while transparent caregiver–patient communication helped mitigate internalized guilt. Family-centered approaches involving caregivers and siblings reduced perceived burden and strengthened family cohesion. Collectively, these mechanisms supported the development of self-regulation, resilience, and recognition of social supports across the patient's illness trajectory. These findings highlight the importance of developmentally sensitive, family-inclusive care in pediatric oncology. Addressing autonomy, cognitive-emotional insight, and family dynamics helps bridge gaps in standard care. Future practice should emphasize professional training, expand psychosocial workforce capacity, and enhance transportation support to improve access to patients, enabling consistent engagement and holistic integration of psychosocial care for youth populations.

Keywords: Childhood cancer, adolescence and middle childhood, pediatric oncology, psychosocial support, family-centered care

Bridging the gap: The role of national cancer society Malaysia halfway homes in alleviating financial burdens for underprivileged cancer patients undergoing treatment in major Malaysian cities

Fion Ong Xin Yue[1], Vidyarubini Gawthaman[1], Petronilla Joseph[1], Sathiya Vani Subramaniam[1], Murallitharan Munisamy[1,2]

[1]National Cancer Society Of Malaysia, 50300, Kuala Lumpur, Malaysia, [2]Faculty of Medical and Life Sciences, Sunway University, 47500, Petaling Jaya, Selangor, Malaysia

Track: Allied Health
Theme: Survivorship

ABSTRACT

Introduction: This study investigates the role of the National Cancer Society Malaysia (NCSM)'s Homes of Hope in alleviating the financial strain experienced by underprivileged cancer patients undergoing treatment in major Malaysian cities. Cancer treatment often imposes significant financial strain, especially on patients from low-income backgrounds who must travel long distances to access specialized care. NCSM's halfway homes provide free accommodation and essential support services, aiming to reduce indirect costs associated with treatment, such as transportation and temporary accommodation. Specifically, the research focuses on perceived financial relief and perceived change in financial burden among patients and caregivers who utilized these halfway homes. **Materials and Methods:** A quantitative survey was conducted to assess how residence in the Homes of Hope influenced these financial perceptions, particularly in relation to non-medical costs such as transportation and accommodation. The data were analyzed using descriptive statistics and bivariate inferential analysis, including Chi-square tests of association. **Results:** The results revealed significant relationships between perceived financial relief and multiple factors such as caregiving responsibilities, income level, and employment disruption ($p<0.000$). Similarly, significant associations were found between changes in perceived financial burden and variables like external financial support, household expenses, and frequency of financial aid applications ($p<0.004$). **Conclusion:** Findings indicate that the Homes of Hope significantly contributed to easing financial burdens and enhancing perceived financial relief, particularly among lower-income groups with limited external aid. The study concludes with recommendations to scale up service provision and foster inter-agency collaboration to improve accessibility and impact nationwide.

Keywords: Underprivileged cancer patients, halfway homes, financial burden, national cancer society malaysia, financial relief

Scaling HPV vaccination through public-private collaboration: Lessons from Johor's LNOB initiative”

Leevyadhashiny Ganasan

National Cancer Society of Malaysia, 50300, Kuala Lumpur, Malaysia

Track: Medical Professionals
Theme: Screening and Diagnosis

ABSTRACT

Background Cervical cancer is the sixth most common cancer among women in Malaysia and the second in Johor. Although HPV vaccination is available, access remains limited for underserved communities. **Aim:** This project showcases a dual-delivery model for HPV vaccination in Johor targeting underserved populations. **Materials and Methods:** Under the National Cancer Society Malaysia's (NCSM) Leaving-No-One-Behind (LNOB) initiative, a two-pronged strategy was employed to increase access to free HPV vaccination among underserved populations in Johor. The first arm involved a GP Clinic Network, comprising 10 private clinics strategically located in underserved urban areas, which offered a familiar and accessible healthcare setting for girls and young women to receive the vaccine while strengthening continuity of care. The second arm focused on community outreach, targeting out-of-school girls, indigenous populations, and rural communities through mobile clinics and collaborations with local leaders, where health education was also provided to address vaccine hesitancy. A qualitative component complemented this approach by conducting in-depth interviews with participating GPs and community leaders to understand logistical challenges and decision-making processes, with thematic analysis used to identify recurring patterns and insights. **Results:** Since June 2024, nearly 23,000 girls and young women have been vaccinated: 7,970 via GPs and 22,685 through outreach. Challenges included vaccine hesitancy, logistical barriers, and cultural sensitivities. Proposed solutions include better health education, GP training, and flexible mobile clinics. **Discussion:** Both delivery models proved effective and complementary. Community outreach excelled in reaching marginalized groups, while GPs ensured stability and follow-up. The LNOB model demonstrates how integrating public-private efforts can enhance equitable vaccine access. The upcoming NCSM Cancer Support Centre in Johor will further support these efforts. C**onclusion:** A dual-delivery, community-partnered HPV vaccination model is key to improving equity and coverage. Sustained partnerships, funding, and engagement are essential to ensure no one is left behind in cervical cancer prevention.

Keywords: HPV vaccination, public-private partnership, underserved communities, community outreach, health equity

98 Shades of grey - health literacy and the BIRADS-3 dilemma among Malaysian women

Kavinash Loganathan[1], Murallitharan Munisamy[1,2]

[1]National Cancer Society Of Malaysia, 50300, Kuala Lumpur, Malaysia, [2]Faculty of Medical and Life Sciences, Sunway University, 47500, Petaling Jaya, Selangor, Malaysia

Track: Determinants of Health
Theme: Prevention

ABSTRACT

Introduction: BIRADS-3 represents a conundrum. Although the Breast Cancer Clinical Practice Guideline (CPG) released by Ministry of Health Malaysia clearly states that women with BIRADS-3 should get a follow-up mammogram after 6 months, this is not always the case. Here, we examined the clinical outcomes of 98 women who reported a BIRADS-3 mammogram during their initial scan as part of a free breast cancer screening program. This was done to understand if these cases were being correctly managed by both healthcare professionals and the patients themselves. **Materials and Methods:** A total of 98 women who reported BIRADS-3 were individually interviewed via telephone regarding their follow-up choice ("Yes, I got a mammogram", "No, I didn't" and "I went for a biopsy instead"). For those who got a mammogram, their follow-up BIRADS score was enquired while for those who did not go for a mammogram, they were asked for their reasons for not doing so. **Results:** Of the 98 women interviewed, only 39 went for a follow-up mammogram while 52 opted not to get another scan. A further 7 got a biopsy instead. Among those who went for a follow-up mammogram, 26 did not know their follow-up score. For those who did not get a follow-up, 11 patients cited doctors' advice that no follow-up was needed, 10 said they had no time for a follow-up and a further 9 cited the COVID-19 pandemic restrictions. **Discussion:** These findings highlight a potential lack of health literacy among both patients and clinicians. Patients should be educated on the significance and follow-ups associated with all possible outcomes while being properly navigated through the screening process. For clinicians, they should be properly read in on the latest CPG and to be ready and able to explain to patients the significance of their BIRADS scores and to motivate proper follow-ups.

Keywords: Breast cancer, mammograms, health literacy, malaysia, screening, early detection