

Malays in Peninsular Malaysia may have the Lowest Incidence of Stomach Cancer in the World

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SUMMARY

The Malaysian National Cancer Registry (NCR) report for the period 2003-2005 shows an incidence of stomach cancer of 2.2 for Malay, 11.3 for Chinese and 11.9 for Indian males per 100,000 population. Malay (1.3), Chinese (7.2) and Indian (7.2) women have rates lower than men. Malays in Peninsular Malaysia have five times less stomach cancer than Chinese and Indians. This racial difference is more marked than that noted in the Singapore cancer registry. Regional data from Kelantan has an even lower rate for Malays there (1.5 for males and 0.9 for females per 100,000 population). The incidence of *Helicobacter pylori* infection, a known risk factor for stomach cancer, is low among Malays.

KEY WORDS:

Stomach cancer, Incidence, Malays, Malaysia

INTRODUCTION

The incidence rate of stomach cancer has been reported to be as high as 93.3 per 100,000 among men in the Yamagata prefecture in Japan¹. Rates above 50 per 100,000 are found among men in China, Russia and Japan, while the rates among females are above 20 per 100,000 in these countries. Across the globe stomach cancer appears to be the second leading cause of cancer death. There is however, notable ethnic and geographical variation in the rate of stomach cancers seen from selected cancer registries. Filipinos in Los Angeles, Thais in the province of Khon Kaen and Kuwaitis have incident rates between 2 to 5 per 100,000¹. Next to Malaysia, Singapore's cancer registry reports an age-standardized rate among males of 21.4 for Chinese, 7.8 for Indians and 6.6 for Malays per 100,000 population. Lower rates are seen for Chinese (10.6), Indian (6.1) and Malay (3.8) females² per 100,000 population.

REVIEW OF THE CANCER REGISTRY DATA

The three year report of the Malaysian National Cancer Registry Data (NCR) covering the years 2003-2005 has just been published³ (Table I). The Age-standardised rates of stomach cancer in Peninsula Malaysia are lower than in Singapore in all races and both sexes. The racial differences are more pronounced. Whereas in Singapore Malays had incidence rates three times lower than Chinese, in Malaysia the rates are five times lower. Malaysia is big in comparison to Singapore and it is interesting to look at regional data in Malaysia. There have been three state cancer registry data published in Malaysia. The Penang Cancer Registry has

incidence rates most similar to Peninsula Malaysia as a whole.⁴ Surprisingly, Sarawak (which is not included in the NCR) has stomach cancer rates almost as high as in Singapore, and for Malay males, the rate there is in fact higher⁵. Malays in Sarawak account for 20.2% of the population and are identified separately from Ibans, Bidayus, Melanau and other indigenous races. Kelantan⁶, on the other hand, has an incidence of stomach cancer, half that of Penang for Malays and even Chinese males. There are too few Indians in Kelantan and Sarawak to register an incidence of stomach cancer in these states.

Data from the Kelantan Cancer Registry is interesting⁶. The numbers are small. There were only 32 cases of stomach cancer among Malay men and 22 among Malay women in the 5 year period. There were even fewer cases among Chinese (8 in males and 2 in females). These small numbers may mean these figures are unreliable (especially the figure for Chinese females) but taken at face value they suggest that Kelantan Malays may have the lowest rates of stomach cancer in the world. The low incidence recorded in Southern Thailand which also has a Malay population lends support to this finding.

DISCUSSION

Although the NCR urged caution in relation to its first report for the year 2002, it has now been able to report that the incident case ascertainment rate achieved was acceptable for clinically diagnosed cancer, and the validity of the data was comparable to those of established registries³. This leaves out only cancer not clinically diagnosed, but diagnosed only at death certification as the only cases not included. However, we can expect that number not to be high in Malaysia. The Penang Cancer Registry has a death certificate only registration rate of 4.8%⁴.

The rate of stomach cancer five times lower among Malays than Chinese and Indians is very interesting. In no other cancer, in Malaysia is there a difference in the ethnic incidence of cancer as contrasting (except in the nasopharynx). All three races share the same country and yet have such different rates of stomach cancer.

The regional differences in Malaysia show a consistent trend. Penang, where Malays have an incidence of stomach cancer higher than the national average is socially and economically more like Singapore. The state where life is most in contrast is Kelantan and there the rate of stomach cancer in Malays is

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Table I: Age-standardised rates of stomach cancer per 100,000 and (number of cases)

Males	Malays	Chinese	Indians
Sarawak Cancer Registry (1996-2000)	9.4 (54)	19.4 (171)	n.a.
Penang_Cancer_Registry(1999-2003)	3.2 (25)	12.3 (170)	9.4 (22)
Kelantan_Cancer_Registry(1999-2003)	1.5 (32)	6.5 (8)	n.a.
NCR (2003-2005)	2.2 (225)	11.3 (817)	11.9 (193)
Females			
Sarawak Cancer Registry (1996-2000)	3.6 (23)	7.8 (81)	n.a.
Penang Cancer Registry (1999-2003)	1.8 (16)	7.8 (135)	10.8 (27)
Kelantan Cancer Registry (1999-2003)	0.9 (22)	1.4 (2)	n.a.
NCR (2003-2005)	1.3 (162)	7.7 (635)	7.2 (146)

half that of Penang, which is already half that of Malays in Singapore.

Radzi *et.al.* were the first to suggest that Kelantan Malays may have the lowest incidence of stomach cancer in the world⁷.

The important question is, why do Malays have such a low incidence of stomach cancer? *Helicobacter pylori* is a known aetiological factor and it has been reported to be low in prevalence among Malays. A large serological study of 2,381 blood donors in four urban areas and subjects from one rural community, showed that in every location in Malaysia, Malays had the lowest rates of *H. pylori* infection (11.9-29.2%) compared to Chinese (26.7-57.5%) and Indians (49.4-57.5%)⁸. Urban Malay blood donors in Kelantan [69/282(24.5%)] however, did not have a significantly lower rate of infection compared to Malay blood donors in Kuala Lumpur [16/135 (11.9%)] nor compared to Malay rural residents in Kuala Pilah [61/380(16.1%)]. However, a previous serological study of blood donors [496(4.2%)] and healthy subject at screening clinics [921(4.8%)] in Kota Bharu produced conflicting results showing a very low prevalence of *H pylori* infection⁹. Another study of *H pylori* infection among patients with peptic ulcers and erosions found at endoscopy also found an exceedingly low rate of infection among Malay patients in Kota Bharu [7.0%(6/68)]¹⁰. It is therefore uncertain if the pattern of *H pylori* infection accounts much for the low incidence of stomach cancer among Malays. In any case, why do Malays in Kelantan have such a low incidence of *H pylori* infection?

Goh *et.al.* have found a low level of education, smoking and a high intake of salted fish and vegetables to be independent risk factors for gastric carcinoma. On the other hand they found a high intake of fresh fruit and vegetables to be protective¹¹.

Genetic factors may possibly also be important but there is one feature we see that argues against this. Whatever the protective factors may be, the signs are that it affects the Chinese in Malaysia. Chinese in Malaysia have a rate of stomach cancer only about half that of Chinese in Singapore and Chinese in Kelantan may have a rate lower than Chinese in the country as a whole. This interesting scarcity of stomach cancer among Malays warrants further epidemiological investigation.

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