

Knowledge and Practice of Medical Doctors on Chronic Obstructive Pulmonary Disease: A Preliminary Survey from a State Hospital

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Summary

This study was done to ascertain the knowledge and practice of medical officers on spirometry and management of COPD in a medical department of a state hospital. A total of 81 questionnaires with nine items were distributed to medical officers in the medical department (MD) and in other departments (controls). Eight incomplete questionnaires were rejected. In all 15 (21%) respondents were analysed from MD and 58 (79%) from the control group. The respondents from MD were aware that spirometry was important in COPD (100% versus 69%, $P < 0.01$) but in practice both groups were as likely to use peak expiratory flow rate. Respondents from MD were more likely to treat mild COPD (73% versus 12%, $P < 0.001$) according to Malaysian Thoracic Society COPD guidelines and also more likely to perform steroid trial (93% versus 37%, $P < 0.001$). Only 9 (60%) from MD and 33 (57%) would refer patients for home oxygen assessment. This preliminary survey suggests that there was lack of translation of knowledge into practice particularly in terms of use of spirometry in COPD as well as lack of awareness for home oxygen assessment. A bigger survey involving all doctors in the state to answer issues raised in this preliminary survey is being conducted.

Key Words: Knowledge and practice, Chronic obstructive pulmonary disease, Medical officers

Introduction

Chronic obstructive pulmonary disease (COPD) is a common cause of illness in a community. It is a progressive illness with considerable morbidity and mortality. It is mainly associated with smoking, the greater the total tobacco exposure the greater the risk of developing COPD¹. The

Ministry of Health of Malaysia annual reports in 1996 ranked respiratory diseases as the fourth leading cause of hospital admissions². In the United Kingdom, a survey of medical and geriatrics admissions to a health region found that 25% of admissions were due to respiratory illness and over half of these admissions were for COPD

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³. Data from the United States showed that mortality had risen by 32.9% between 1979 and 1991 ⁴. No accurate data is available for Malaysia.

The Malaysian Thoracic Society in collaboration with the Ministry of Health of Malaysia and the Academy of Medicine of Malaysia published COPD management guidelines in 1998. The aim of these guidelines was to improve the overall management of COPD in Malaysia⁵. The guidelines were printed in the form of a booklet and were widely disseminated throughout hospitals in Malaysia.

There have also been several earlier national guidelines on management of COPD with the identical aim of improving management of this disease ^{6,7,8}. Not much is known on how much doctors comply with clinical practice guidelines in managing COPD. This is also the situation in Malaysia. Several reasons have been put forth as to why doctors do not comply. Some surveys suggest that physicians tend to rely on their own experience or recommendation by local colleagues when making decisions about their patients⁹.

The aim of this preliminary study was to assess the knowledge and practice of medical doctors on COPD in the medical department of a state hospital with other medical doctors in the same hospital as controls. The study focused on two areas of knowledge and practise: spirometry and management of COPD patients.

Materials and Methods

A questionnaire was given by hand to all medical officers working in the medical department (MD) in September 1999. The questionnaires were collected immediately upon completion. The same questionnaire was also given by hand to all other medical officers in other departments in the state hospital. These departments included surgery, orthopaedics, outpatient, anaesthesia, obstetrics and gynaecology, accident and emergency, psychiatry, dermatology and

paediatrics. This study was carried out in an accredited hospital, which necessitated the availability of clinical practice guidelines in every department for doctors' references.

A medical officer was defined as a doctor who had completed the housemanship training and had not completed any postgraduate training either locally or abroad. Doctors included had to be employed at the hospital at the time of the study. Each doctor was to complete the questionnaire once even if he or she had been transferred to another department within the one month period of the study.

Each question had its respective predetermined responses of 'Yes', 'No' or 'Unsure'. No comments or subjective responses were required of the respondents. One question concerning treatment had preset doses and durations, which the respondents had to choose from.

Statistical analysis

For questions with 'Yes' and 'No' responses, differences between proportions were analysed using the Chi square test of significance.

'Unsure' answers were grouped with 'No' answers for statistical analysis. Comparison between means of parametric data were analysed using Student's t-test. A p value of below 0.05 ($p < 0.05$) was considered statistically significant.

Results

A total of 81 questionnaires were given to all the medical officers in the hospital, 15(19%) to MD and the rest 66 (81%) to controls. Eight 8(10%) questionnaires were excluded, as the answers were incomplete (all were from the control group). Demographic data of the respondents is summarised in Table I. There were 15(21%) respondents from MD and 58(79%) controls. There was no significant difference in the mean duration of hospital posting between the two groups. The mean duration of hospital posting in months and the standard deviation were 30.3(11.8 and 28.5(9.9 for doctors in MD and controls respectively.

A. Spirometry (See Table II)

1. *Measurement of forced expiratory volume in one second (FEV1) and forced vital capacity (FVC) and including the ratio are important in managing patients with COPD.*

A total of 54(74%) respondents from both groups answered 'Yes' and 17(23%) answered 'No' with 2(3%) giving 'Unsure' as the answers. Comparing the two groups, respondents from MD were more likely to give a 'Yes' answer. (100% versus 69%, $P < 0.01$).

2. *Requesting spirometry is troublesome when compared to requesting peak expiratory flow rate (PEFR) using peak flow meter.*

A total of 12(80%) respondents from MD felt it was troublesome to request spirometry and 31(53%) controls felt likewise. There was no statistical significance when comparing the two groups.

3. *In my clinical practice, PEFR was the main measurement used to monitor COPD patients compared to FEV1 and FVC.*

There was no difference in the number of respondents from both groups who would use PEFR over spirometry in clinical practice. Six (10%) respondents from the control group answered 'Unsure'.

4. *PEFR approximates spirometric measurements (FEV1 and FVC) well.*

There was no significant difference in the proportion that answered 'Yes' in both groups. There were 2 'unsure' answers from controls.

B. Management (See Table III)

1. *For patients with mild symptoms, I would initially commence inhalers in the form of ipratropium bromide and salbutamol.*

Majority of the respondents from MD (n=11, 73%) gave a 'Yes' answer and this result

was significantly different when compared with respondents from the control group where only 7(12%) answered 'Yes' ($P < 0.001$).

2. *If symptoms were not controlled with the inhalers, I would add theophylline preparations.*

Thirteen (87%) respondents from MD and 44(76%) controls gave the answer 'Yes'. The difference between the groups was not statistically significant.

3. *I would perform steroid trial on patients with COPD.*

A total of 14(93%) respondents from MD answered 'Yes' compared to 22(37%) respondents from the control group. This result was statistically significant ($P < 0.001$).

4. *Favourable response from steroid trial favours treatment with inhaled corticosteroids. (e.g. Pulmicort or Becotide)*

There was no statistical difference between the two groups. Fourteen (93%) from MD and 53 (91%) from the control group answered 'Yes'.

5. *If indicated, I would refer COPD patients for assessment for home oxygen concentrator.*

Nine (60%) respondents from MD answered 'Yes' and 33(57%) answered likewise from controls. This result was not statistically significant.

6. *Duration and doses of steroid during steroid trial. (See Figure 1 and Figure 2)*

Majority of respondents from MD (n=9, 60%) chose 30mg as the dosage for steroid trial. Respondents from the control group (n=21, 36%) however, favoured 10mg prednisolone over other dosages. In terms of duration for steroid trial, respondents from MD chose one week and two weeks in equal proportion. (n=7, 47% each). One week duration, however, was most favoured by the controls. (n=25, 43%)

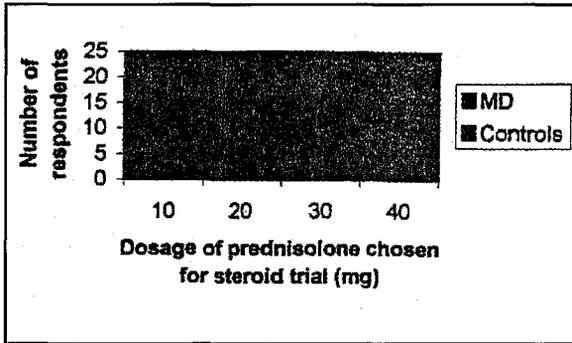


Fig. 1: The number of respondents and the dosage of prednisolone chosen for trial

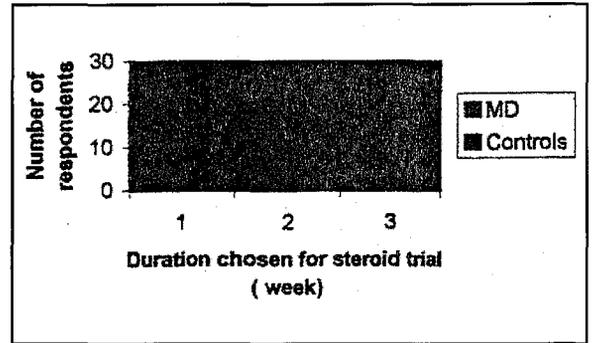


Fig. 2: The number of respondents and the duration chosen for steroid trial in weeks

Table I : Demographics of the respondents

	MD (n=15)	Controls (n=58)	p Value
Male	6	27	NS
Female	9	31	
Total	15	58	
Duration of clinical posting (months)* Mean (\pm SD)	30.3 \pm 11.8	28.5 \pm 9.9	NS
Respondents from control group			
Accident and emergency		8 (14%)	
Outpatient department		6 (10%)	
Obstetrics and gynaecology		11 (19%)	
Surgery		10 (17%)	
Psychiatry		3 (5%)	
Orthopaedics		8 (14%)	
Dermatology		2 (3%)	
Anaesthesia		2 (3%)	
Paediatrics		8 (14%)	
Total		58 (100%)	

The p value was obtained when comparing the mean duration of clinical posting in months for respondents from MD against respondents from control.

*Refers to duration spent working in a hospital after completion of housemanship training regardless of medical specialty.

MD stands for respondents from the medical department.

NS stands for not significant

Table II : Summary of respondents' responses on spirometry

Question		MD (n=15)	Control (n=58)	Chi-sq (df=1)	p-value
1. FEV ₁ and FVC are important in COPD	Yes	15 (100%)	36 (69%)	5.05	p<0.01
	No	0 (0%)	17 (29%)		
	Unsure	0 (0%)	2 (4%)		
	Total	15 (100%)	58 (100%)		
2. Resquesting spirometry is troublesome	Yes	12 (80%)	31 (53%)	2.46	NS
	No	3 (20%)	19 (33%)		
	Unsure	0 (0%)	8 (14%)		
	Total	15 (100%)	58 (100%)		
3. PERFR used more than Yes FEV ₁ and FVC for monitoring.	Yes	13 (87%)	38 (66%)	1.63	NS
	No	2 (13%)	14 (24%)		
	Unsure	0 (0%)	6 (10%)		
	Total	15 (100%)	58 (100%)		
4. PERFR approximates FEV ₁ and FVC values.	Yes	7 (7%)	7 (12%)	0.02	NS
	No	14 (93%)	49 (84%)		
	Unsure	0 (0%)	2 (24%)		
	Total	15 (100%)	58 (100%)		

Unsure' answers were considered as 'No' answers.

FEV₁ stands for forced expiratory volume in one second.

FVC stands for forced vital capacity.

PEFR stands for peak expiratory flow rate.

NS stands for not significant.

Table III : Summary of respondents' responses on management of COPD

Question		MD (n=15)	Control (n=58)	Chi-sq (df=1)	p-value
1. Mild COPD only require ipratropium bromide and salbutamol inhalers	Yes	11 (73%)	7 (12%)	20.89	p<0.01
	No	4 (17%)	49 (84%)		
	Unsure	0 (0%)	2 (4%)		
	Total	15 (100%)	58 (100%)		
2. If inhalers inadequate, I would add theophylline preparations.	Yes	13 (87%)	44 (76%)	0.3	NS
	No	2 (13%)	11 (19%)		
	Unsure	0 (0%)	3 (5%)		
	Total	15 (100%)	58 (100%)		
3. I would perform steroid trial	Yes	14 (93%)	22 (37%)	12.5	p<0.001
	No	1 (7%)	11 (19%)		
	Unsure	0 (0%)	25 (44%)		
	Total	15 (100%)	58 (100%)		
4. Positive steroid trial favours use of steroid inhalers	Yes	14 (93%)	53 (91%)	0.08	NS
	No	1 (7%)	3 (5%)		
	Unsure	0 (0%)	2 (4%)		
	Total	15 (100%)	58 (100%)		
5. I would refer patients for home oxygen therapy if medically indicated	Yes	9 (60%)	33 (57%)	0.006	NS
	No	6 (40%)	22 (38%)		
	Unsure	0 (0%)	3 (5%)		
	Total	15 (100%)	58 (100%)		

Unsure' answers were considered as 'No' answers.

NS stands for not significant.

Discussion

Both groups of respondents were similar in terms of length of service in government hospitals. Respondents from both groups were aware that PEFr did not approximate well with FEV1 and FVC in clinical practice. In addition, the respondents from MD were also aware that spirometry was important in assessing and monitoring patients with COPD. This awareness, however, did not translate into clinical practice since both groups were as likely to use PEFr as the main measurement in managing their COPD patients. One reason for this discrepancy was evident from the study results since respondents from both groups felt that requesting for spirometry was troublesome.

In terms of managing mild COPD, the respondents from MD were more likely to answer 'Yes' in accordance with the MTS guidelines. The majority of controls 49(84%) felt inhalers were inadequate. Both groups were likely to use theophylline preparations once control in mild COPD was inadequate with inhalers. Steroid trial was more likely to be instituted by the respondents from MD but both groups recognised that positive response indicates possible benefits from inhaled corticosteroids. Recent evidence^{10,11} however suggests that long term benefits of inhaled corticosteroid is lacking.

There was no difference in terms of likelihood of referral for home oxygen assessment from both groups. There were only 34(59%) respondents from both groups who would refer patients for assessment of home oxygen even though the benefits of this are well proven^{12,13}.

There was also wide variation in terms of dosages and durations for steroid trial reflecting lack of awareness on this matter.

Conclusion

In this preliminary study, it was shown that respondents from both groups knew that spirometry was important in managing COPD patients but this did not translate into clinical practice. Except for respondents' perception that requesting spirometry was troublesome, the reasons for lack of use of spirometry are unknown. There were significant differences in the responses on management of mild COPD and the likelihood of a steroid trial being performed. There was lack of awareness in both groups of respondents regarding referral for assessment for home oxygen concentrator when medically indicated. A larger survey is being conducted involving all doctors in the state to try to confirm the findings of this preliminary survey. It is hoped this study may also answer some of the issues raised especially regarding referral for assessment for home oxygen concentrator.

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