

Assessment of Pulmonary Diseases among Patients Visited in Hospital: A Prospective Study

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ABSTRACT

Background: Adult respiratory diseases in the developing world are a major burden in terms of morbidity and mortality and, particularly as related to chronic respiratory disease, are of increasing concern.

Aim of the study: To assess pulmonary diseases among patients visiting in hospital.

Materials and Methods: The study was conducted in the department of general medicine MMG District Hospital, Ghaziabad, Uttar Pradesh, India. For the study we included all the patients from 18-60 years of age reporting to hospital outpatient department who agreed to give written consent. The patients were provided with a questionnaire to identify the following major symptoms of chronic respiratory tract disease — chronic cough, chronic phlegm, dyspnea and wheezing. The respondents were also asked whether they had been informed by a doctor that they had a chronic respiratory condition.

Results: A total of 120 patients participated in the study. The mean age of patients was 41.87 years. The number of male patients in study group was 68. The mean BMI of patients was 29.34 kg/m². In the group, 19 patients were currently smoker, 29 were past smokers and 72 patients were non-smoker.

Conclusion: The most common pulmonary disease was influenza followed by pneumonia. Asthma, COPD, pulmonary TB and occupational lung disease were not uncommon.

KEYWORDS: Asthma, COPD, Pulmonary Diseases, Respiratory Disease.

INTRODUCTION

Pulmonary diseases are defined as chronic diseases of the respiratory tract and other structures of the lung. The most common diseases are asthma and chronic obstructive pulmonary disease. These diseases represent a challenge to the public health in both industrialized and developing countries because of their frequency and economic impact.^{1,2} Globally, pulmonary diseases are set to occupy the third most common cause of death and the fifth most common cause of disability by 2029. In India, chronic respiratory disease was estimated to account for 7 per cent of all deaths and 3 per cent of DALY'S lost¹⁰. Tobacco smoking is observed to be the most important risk factor associated with chronic respiratory morbidity.³ Environmental tobacco smoke and exposure to biomass fuels are other important risk factors especially in women and children. Adult respiratory diseases in the developing world are a major burden in terms of morbidity and mortality and, particularly as related to chronic respiratory disease, are of increasing concern.^{4,5}

For many years, the leading cause of adult respiratory disease mortality has been tuberculosis, which still kills far more people than it should, given the increased efficacy of treatment and preventive regimens.⁶ Hence, the present study was planned to assess pulmonary diseases among patients visiting in hospital.

MATERIALS AND METHODS

The study was conducted in the department of general medicine of the MMG District Hospital, Ghaziabad, Uttar Pradesh, India. The ethical clearance for the study was obtained from the ethical board of the institute prior to commencement of the study. For the study we included all the patients from 18-60 years of age reporting to outpatient department of medicine for pulmonary diseases who agreed to give written consent. A total of 120 patients agreed to participate in the study. The patients were questioned and thorough medical examination was done to identify the following major diseases of respiratory tract — asthma, chronic

obstructive pulmonary disease, influenza, pneumonia, pulmonary tuberculosis and occupational lung disease. The diagnosis was confirmed by repeating labs and clinical examination by an experienced physician. The smoking status of the patients was also recorded on the basis of current smoker, past smoker and non-smoker.

The collected data was subjected to statistical analysis. The statistical analysis of the data was done using SPSS version 20.0 for windows. The Student's t-test and Chi-square test were used to check the significance of the data. The p-value less than 0.05 was predetermined as statistically significant.

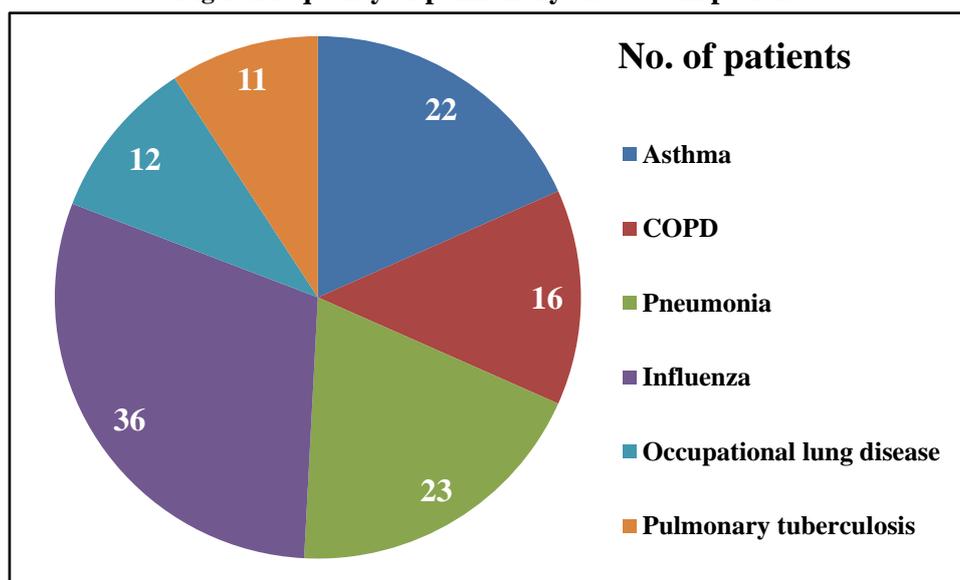
Table 1: Characteristic parameters of patients reporting to hospital

Characteristic parameters	Patients	p-value
Mean age (years)	41.87	0.44
No. of male patients (n)	68	0.32
Mean BMI (kg/m ²)	29.34	0.11
Smoking history		0.25
• Non smoker	72	
• Past smoker	29	
• Current smoker	19	

Table 2: Fequcy of pulmonary diseases in patients reporting to hospital

Pulmonary diseases	No. of patients	p-value
Asthma	22	0.22
COPD	16	
Pneumonia	23	
Influenza	36	
Occupational lung disease	12	
Pulmonary tuberculosis	11	

Fig 1: Frequency of pulmonary diseases in patients



RESULTS

A total of 120 patients participated in the study. Table 1 shows characteristic parameters of subjects. The mean age of patients was 41.87 years. The number of male patients in study group was 68. The mean BMI of patients was 29.34 kg/m². In the group, 19 patients were currently smoker, 29 were past smokers and 72 patients were non-smoker.

Table 2 and Fig 2 show the frequency of pulmonary diseases in patients reporting to hospital. Asthma was seen in 18% patients, Pneumonia in 19% patients, occupational lung disease in 10% patients, COPD in 14% patients, Influenza in 30% patients and pulmonary tuberculosis in 9% patients. On comparing the results were found to be statistically non-significant. (p>0.05)

DISCUSSION

In the present study we assessed pulmonary diseases among patients visiting in hospital. We observed that influenza was the most common diagnosis in patients (30%) followed by pneumonia (19%). The results were statistically non-significant. The results were compared with previous studies and results were consistent with previous studies. Sandelowsky H et al described the prevalence and severity of undiagnosed COPD in a group of patients with respiratory infections attending urgent primary care, and to identify those variables in patients' history that could be used to detect the disease. Patients of 40-75 years (n = 138) attending urgent primary care center with acute respiratory tract infection, positive smoking history and no previously known pulmonary disease underwent pre- and post-bronchodilator spirometry testing four to five weeks after the acute infection. Prevalence and severity of COPD were estimated following the Global Initiative for COPD (GOLD) criteria. Variables such as sex, age, current smoking status, smoking intensity (pack years) and types of infection diagnosis were assessed for possible associations with COPD. The prevalence of previously undiagnosed COPD in our study group was 27%, of which 45% were in stage 1, 53% in stage 2, 3% in stage 3 and 0% in stage 4. They found a significant association between COPD and age ≥ 55 and between COPD and smoking intensity (pack years > 20). Sex, current smoking status and type of infection diagnosis were not shown to be significantly associated with COPD. They concluded that a middle-aged or older patient with any type of common respiratory tract infection, positive smoking history and no previously known pulmonary disease has an increased likelihood of having underlying COPD. Al Ghobain M et al estimated the prevalence of COPD among smokers more than 40 years of age attending primary healthcare clinics in Saudi Arabia. A questionnaire was used in a cross-sectional collection of demographic data and other items related to diagnosis of COPD in patients visiting primary healthcare clinics. Eligible subjects were current or ex-smokers and aged 40 years or above. Spirometry was performed according to American Thoracic Society criteria. Airflow obstruction was classified according to the 2003 update of the World Health Organization and Global Initiative for Chronic Obstructive Lung Disease criteria. COPD was defined as a ratio less than 0.70 of post-bronchodilator-predicted forced expiratory volume in the first second to forced vital capacity. Because of incomplete data or poor performance on spirometry, of 1380 subjects eligible for the study, only 501 subjects were eligible for data analysis. Seventy-one patients had an FEV1/FVC ratio < 0.70 , comprising 14.2% of the study population, of which 95.8% were males. Current smokers comprised 57 (80.3%) subjects. Of the 71 subjects who fulfilled the criteria for COPD diagnosis,

none were found to be in COPD stage I; 40 (56.3%) were in stage II and 31 (43.6%) were in stage III of the disease. It was concluded that underdiagnosis of COPD in primary healthcare clinics in Saudi Arabia is common, but its extent is not different from the corresponding data available in the literature for other countries. Use of spirometry as a routine test for all patients older than 40 years of age and with a smoking history can help in early detection and proper diagnosis of COPD, which subsequently will help in implementation of preventive measures.^{7,8}

Chhabra P et al studied the prevalence of respiratory morbidity and its associated factors in urban Delhi. A cross-sectional, house-to-house survey was conducted in an urban upper middle class locality. All the residents aged 18 years or more were administered a questionnaire to identify the major symptoms of chronic respiratory tract disease — chronic cough, chronic phlegm, dyspnea and wheezing. The prevalence of all these symptoms in different groups was calculated. Chi square test and logistic regression were applied to determine the significant factors. A total of 3465 individuals were interviewed of which 1756 (50.68%) were males and 1709 (49.3%) were females. Only 9.05% of the men smoked. The overall prevalence of chronic cough, chronic phlegm and dyspnea was 2.0%, 1.2% and 3.4%, respectively. The prevalence of wheezing was 3.2%. All the symptoms increased with age ($P < 0.05$). No significant difference was observed in these symptoms between males and females. Less educated and retired individuals were more likely to have respiratory symptoms. The prevalence of chronic cough, chronic phlegm, dyspnea and wheezing was 5.8%, 2.9%, 9.9% and 8.7%, respectively, among smokers, which was significantly higher than that observed in nonsmokers. Logistic regression analysis revealed that age and smoking remained significant factors for occurrence of all the respiratory symptoms. Mahesh PA et al estimated the prevalence of chronic cough and phlegm in the absence of dyspnea and wheezing and to study its associated factors in a representative population of Mysore district. A cross-sectional survey was planned in a representative population of Mysore taluk. Eight villages were randomly selected based on the list of villages from census 2001. Trained field workers using the Burden of Obstructive Diseases questionnaire carried out a house-to-house survey. A total of 4333 adult subjects were enrolled in the study with 2333 males and 2000 females. The prevalence of chronic cough in the community was 2.5 per cent and that of chronic phlegm was 1.2 per cent. A significant association was observed between chronic cough and age, gender, occupation and smoking and chronic phlegm with age, gender, occupation, indoor animals and smoking. A multivariate analysis confirmed independent association of age,

occupation and smoking for chronic cough and age and smoking for chronic phlegm. On sub-group analysis of males, heavy smokers had higher prevalence of chronic cough and chronic phlegm as compared to light smokers and non-smokers. It was concluded that the prevalence of chronic cough was 2.5 per cent and chronic phlegm was 1.2 per cent in the general population in Mysore which is lower than that observed in other studies.^{9, 10}

CONCLUSION

Within the limitations of the study we conclude that the most common pulmonary disease was influenza followed by pneumonia. Asthma, COPD, pulmonary TB and occupational lung disease were not uncommon.

REFERENCES

1. Lopez AD. Causes of death in industrial and developing countries: Estimates for 1985-1990. In: Jamison DT, editor. Disease control priorities in developing countries. Washington DC: Oxford Medical Publications; 1993. pp. 35–50.
2. Murray CJL, Lopez AD, editors. The global burden of disease: A comprehensive assessment of mortality and disability from diseases, injuries and risk factors in 1990 and projected to 2020. Cambridge, MA: Harvard University Press; 1996.
3. Annesi I, Kauffmann F. Is respiratory mucus hypersecretion really an innocent disorder. A 22-year mortality survey of 1,061 working men? *Am Rev Respir Dis.* 1986;134:688–93.
4. Lange P, Nyboe J, Appleyard M, Jensen G, Schnohr P. Relation of ventilatory impairment and of chronic mucus hypersecretion to mortality from obstructive lung disease and from all causes. *Thorax.* 1990;45:579–85.
5. Jindal SK, Aggarwal AN et al. A multicentric study on epidemiology of chronic obstructive pulmonary disease and its relationship with tobacco smoking and environmental tobacco smoke exposure. *Indian J Chest Dis Allied Sci.* 2006;48:23–9.
6. Zhong N, Wang C, Yao W, Chen P, Kang J, Huang S, et al. Prevalence of chronic obstructive pulmonary disease in China: a large, population-based survey. *Am J Respir Crit Care Med.* 2007;176:753–60.
7. Sandelowsky H, Ställberg B, Nager A, Hasselström J. The prevalence of undiagnosed chronic obstructive pulmonary disease in a primary care population with respiratory tract infections - a case finding study. *BMC Family Practice.* 2011;12:122. doi:10.1186/1471-2296-12-122.
8. Al Ghobain M, Al-Hajjaj MS, Wali SO. Prevalence of chronic obstructive pulmonary disease among smokers attending primary healthcare clinics in Saudi Arabia. *Ann Saudi Med.* 2011 Mar-Apr;31(2):129-33. doi: 10.4103/0256-4947.77485.
9. Chhabra P, Sharma G, Kannan AT. Prevalence of Respiratory Disease and Associated Factors in an Urban Area of Delhi. *Indian Journal of Community Medicine : Official Publication of Indian Association of Preventive & Social Medicine.* 2008;33(4):229-232. doi:10.4103/0970-0218.43227.
10. Mahesh PA, Jayaraj BS, Prabhakar AK, Chaya SK, Vijayasimha R. Prevalence of chronic cough, chronic phlegm & associated factors in Mysore, Karnataka, India. *Indian J Med Res.* 2011 Jul;134:91-100.

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