Research Article

Profile of respiratory problems in patients attending a tertiary care center OPD - A study from central India

Dubey A[1], Sharma P[2]

[1]Dr Ashish Dubey, Assistant Professor, Department of TB & Chest, [2]Dr Parag Sharma, Assistant Professor, Department of Pulmonary Medicine, Both are affiliated to Chirayu Medical College & Hospital, Bhopal, MP, India

Abstract

Introduction: The top four respiratory diseases, lower respiratory tract infections, chronic obstructive pulmonary disease (COPD), tuberculosis, and lung cancer, are among the ten leading causes of death worldwide. **Methodology:** A Hospital based cross-sectional study carried out in the Department of Tb and Chest of Chirayu Medical College and Hospital, Bhopal located in central India. All the patients, who visited hospital out-patient department during the period January 2013 to December 2014, with complaints of respiratory illness were included in the study. **Results:** Out of total 1690 patients, most commonly observed respiratory disease is URTI, which was seen in 642(37.99) patients, followed by asthma which was seen in 436(25.8%) of the patients. Less common findings were haemoptysis, chest pain and lymphadenopathy of undiagnosed etiology which was seen in 24(1.42%), 11(0.65%) and 08(0.47%) of the patients respectively. **Conclusion:** Most of the cases of respiratory diseases belong to geriatric age group. So, there is a need towards targeting the health resources in prioritizing the respiratory illness among geriatric population.

Keywords: Asthma, Cough, Chronic obstructive pulmonary disease, Respiratory Illness.

Introduction

India is a vast country with an enormously variable population. There are large differences in geographical, environmental, ethnic, religious, cultural and socioeconomic parameters in different population groups in India which affect the human health and disease occurrence. Therefore, the study of disease epidemiology in India is singularly difficult [1]. The burden of respiratory diseases in India is huge. Although some epidemiological data is available on major respiratory problems such as asthma [2], tuberculosis [3], COPD [4,5] and bronchogenic carcinoma [6,7] an efficient database for different respiratory diseases is absent. Respiratory diseases constitute a major cause of morbidity and mortality worldwide. The top four respiratory diseases, lower respiratory tract infections, chronic obstructive pulmonary disease (COPD), tuberculosis, and lung cancer, are among the ten leading causes of death worldwide [8]. In India another developing country, pneumonia and pulmonary tuberculosis ranked in the top five causes of death [9]. The association of respiratory disorders with geographical region may be relevant with population density, industrial and textile pollutants, and tobacco consumption. The relationships between socio-economic developments, behavioral and environmental factors of these diseases were well premeditated [10].

Manuscript received: 2th July 2015
Reviewed: 14th July 2015
Author Corrected: 24th July 2015
Accepted for Publication: 7th Aug 2015

Material and Methods

A Hospital based cross-sectional study carried out in the Department of Tb and Chest of Chirayu Medical College and Hospital, Bhopal located in central India. All the patients, who visited hospital out-patient department during the period January 2013 to December 2014, with complaints of respiratory illness were included in the study. Patients who did not give consent or denied to participate in the study were excluded. A pretested and pre-structured questionnaire was used to interview the subjects and to collect data on demographic characteristics and clinical profile of the patients.

The diagnosis of respiratory diseases was based upon the clinical history, clinical examination, X-ray chest and PFT (Pulmonary Function Test). Patients under study were thoroughly asked for age, sex, occupation, Smoking habits and sign and symptoms. Apart from the specific investigation to diagnosis, routine investigation

performed in each patient was CBC + ESR, Urine-routine & microscope.

Procedure

The criteria for diagnosis of different diseases were as follows:

Infections were diagnosed with the presence of purulent expectoration with systemic symptoms of infection as fever, sore throat, cough, muscle pain etc. along with and radiological examination and presence of leucocytosis on blood examination.

Pleural lung diseases were diagnosed with the help of pleural fluid analysis, chest x-rays, CT scan and biopsy of the pleural fluid.

Interstitial Lung diseases were diagnosed by using the ATS-ERS [11] guidelines. HRCT scan of the thorax were done in all the possible cases and bronchoscopy with transbronchial lung biopsy or bronchoalveolar lavage biopsies were done wherever possible.

Asthma and COPD were diagnosed on the basis of GINA [12] and GOLD [13] guidelines along with history and clinical examination.

Obstructive sleep apnea was diagnosed when there were more than 10 spells of hypopnea/apnea per hour in a polysomnography with an intact respiratory effort [14].

Bronchogenic carcinoma was diagnosed after biopsy or CT guided fine needle aspiration cytology of lung mass or accessible lymph nodes, from histopathological examination bronchial biopsy or from cytological examination of transbronchial needle aspiration smear.

Tuberculosis was diagnosed by sputum for AFB and culture for mycobacterium tuberculosis and atypical mycobacterial infection.

Sarcoidosis was diagnoses by histological demonstration of noncaseating granuloma from at least two tissue sites in the background of typical or suspected clinical and radiological findings.

Results

A total of 1690 patients were included in the study. There were 980 males and 710 females with a male to female ratio of 1.38:1. The average age for the males was 39±15.2 years with a range of 4 to 72 years, whereas for the females it was 36±16.7 years with a range of 3 to 69 years.

Table No. 1: Distribution of the patients as per the various respiratory diseases

Disease	Number of patients (n=1690)	Percentage (%)
Cough undiagnosed	56	03.32
Pneumonia	76	04.49
Asthma	436	25.80
COPD	269	15.92
URTI	642	37.99
Tuberculosis	24	01.42
ILD	54	03.20
benign mass	18	01.06
Malignant mass	10	00.59
Pleural pathology	32	01.89
Obstructive sleep apnoea syndrome	18	01.06
Sarcoidosis	12	00.71
Haemoptysis of undiagnosed etiology	24	01.42
Chest pain of undiagnosed etiology	11	00.65
Lympadenopathy of undiagnosed etiology	08	00.47
Total	**1690**	**100**

Out of total 1690 patients, most commonly observed respiratory disease is URTI, which was seen in 642(37.99) patients, followed by asthma which was seen in 436(25.8%) of the patients. Less common findings were haemoptysis, chest pain and lymphadenopathy of undiagnosed etiology which was seen in 24(1.42%), 11(0.65%) and 08(0.47%) of the patients respectively. Distribution of the patients as per the various respiratory diseases is shown in Table No.1.

In our study, almost all the respiratory illnesses were more seen among females except Asthma and Pneumonia which were more prevalent in males. As the age advances prevalence of almost all the respiratory diseases were increased except in pneumonia which was more prevalent in younger age group. Distribution of respiratory diseases as per the age group and sex is shown in table No. 2

Table No. 2: Distribution of the various respiratory diseases as per the age and sex

Age & Sex	Tuberculosis (n=24)	Asthma (n=436)	Pneumonia (n=76)	COPD (n=269)	Tumors (n=28)	ILD (n=54)
Gender						
Male	08(33.3)	226(51.83)	42 (55.26)	102(37.92)	09(32.14)	25(46.30)
Female	16(66.6)	210(48.17)	34(44.74)	167(62.08)	19(67.86)	29(53.70)
Age in years						
0-15	01(4.17)	0	42(55.27)	38(14.13)	01(03.57)	0
16-30	01(4.17)	15(03.44)	02(02.63)	07(02.60)	-	02(03.71)
31-45	07(29.1)	86(19.72)	02(02.63)	05(01.86)	02(07.14)	06(11.11)
46-60	08(33.3)	109(25.0)	07(09.21)	76(28.25)	09(32.14)	17(31.48)
>60 years	07(29.1)	226(51.84)	23(30.26)	143(53.16)	16(21.43)	29(53.70)

Discussion

In our study, out of total 1690 patients, majority 642(37.99%) had URTI followed by asthma which was seen in 436(25.8%) of the patients. In a retrospective study conducted in Nigeria asthma was seen in 16(4.9%) patients [15], and in a study conducted by Angira Das Gupta et al in 2008 in Kolkata, asthma was seen in 26% cases and infective problems excluding tuberculosis and pneumonia was seen in 7.16% cases out of total 2012 patients [16].

In our study tuberculosis was found in 24 (1.42%) of the patients and in 56(3.32%) of the patients complaint of cough remain undiagnosed because of loss to follow up. In a study conducted in Kolkata in 2008 tuberculosis was seen in 146(7.26%) of the patients [16], whereas in a study conducted in Kerala in a tertiary tuberculosis care center tuberculosis was seen in 10.1% of the patients [17].

In our study, pneumonia was seen in 76(4.49%) out of total 1690 patients, it was seen mostly in the 0-15 year age group. Whereas in a study conducted by Zaman et al in Bangladesh in 2014, 4% of the total patients were suffering from pneumonia [18].

In our study COPD was seen in 269 (15.92%) of the study subjects. It was observed that majority of the cases were more than 60 years of age. Whereas a study conducted by PA Mahesh in Karnataka prevalence of COPD was found to be 7.1% of the total 900 hundred population [19].

In our study ILD was seen in 54(3.2%) and sarcoidosis was found in 12(0.71%), whereas in a similar study conducted Angira Das Gupta et al in 2008 in Kolkata, ILD was found in 87(4.32%) of the total 2012 cases. And sarcoidosis was found in 24(1.19%) of the total cases [16].

As it was a hospital based study, and most of the cases were referred so the prevalence of the diseases actually does not reflect the prevalence in representative population. However this study will be helpful in comparing similar type of data from other part of the country.

Conclusion

Despite the limitation in our study, our study population represents the spectrum of respiratory diseases presenting at a tertiary care hospital. Most of the cases of respiratory diseases belong to geriatric age group. So,

there is a need towards targeting the health resources in prioritizing the respiratory illness among geriatric population.

Funding: Nil
Conflict of interest: Nil
Permission from IRB: Yes

References

1. Jindal SK. Respiratory disease epidemiology in India. Lung India 2006;23(2):93-4. DOI: 10.4103/0970-2113.44419.

2. Jindal SK. Bronchial asthma: the Indian Scene. Curr Opin Pulm Med. 2007 Jan;13(1):8-12.

3. Chakraborty AK. Epidemiology of tuberculosis: Current status in India Indian J Med Res. 2004 Oct;120(4):248-76.

4. Jindal SK. Emergence of chronic obstructive airway disease as on epidemic in IndiaIndian J Med Res. 2006 Dec;124(6):619-30.

5. Chhabra SK, Chhabra P, Rajpal S, Gupta RK. Ambiant air pollution and chronic respiratory morbidity in Delhi. Arch Environ Health. 2001 Jan-Feb;56(1):58-64.

6. Behera D, Kashyap S. Pattern of malignancy in a north Indian hospital. J Indian Med Assoc. 1988 Feb;86(2):28-9.

7. Karai GS, Nath HK, Paul G, Saha D, Roy HK. Carcinoma of the lung: A record and analysis of 100 cases. Indian J Cancer. 1967 Jun;4(2):105-13.

8. Lozano R, Naghavi M, Foreman K, Lim S, Shibuya, K. Aboyans, V. Global and regional mortality from 235 causes of death for 20 age groups in 1990 and 2010: a systematic analysis for the Global Burden of Disease Study 2010. *The Lancet*, *380*(9859), 2095-2128.

9. WHO, "Global Burden of Disease: 2004 update," vol. 1211, World Health Organization, Geneva, Switzerland, 2008. http://www.who.int/healthinfo/global_burden_disease/2004_report_update/en/index.html.

10. Smit KR. National Burden of disease in India from indoor air pollution. 2000. Proc Natl Acad Sci U S A. 2000 Nov 21;97(24):13286-93.

11. American Thoracic Society. Idiopathic pulmonary fibrosis: diagnosis and treatment International consensus statement American Thoracic Society (ATS), and the European Respiratory Society (ERS) Am J Respir Crit Care Med. 2000 Feb;161(2 Pt 1):646–64.

12. Bousquet J, Clark TJ, Hurd S, Khaltaev N, Lenfant C, O'byrne P, Sheffer A. GINA guidelines on asthma and beyond. Allergy. 2007 Feb;62(2):102–12.

13. Hurd S, Anzueto A, Barnes PJ, Buist SA, Calverley P, Fukuchi Y, Jenkins C, Rodriguez-Roisin R, van Weel C, Zielinski J. Global Strategy for the Diagnosis, Management, and Prevention of COPD - 2006 Update. Am J Respir Crit Care Med. 2007 Sep 15;176(6):532-55. Epub 2007 May 16.

14. Stierer T. Demographics and Diagnosis of Obstructive Sleep Apnea. Anesthesiol Clin North America-01-SEP- 2005;23(3):405–20.

15. Victor A, Umoh, AO, Henry O, Emmanuel E.The Pattern of Respiratory Disease Morbidity and Mortality in a Tertiary Hospital in Southern-Eastern Nigeria. Pulmonary Medicine. vol. 2013, Article ID 581973, 6 pages, 2013. doi:10.1155/2013/581973.

16. Dasgupta A, Bagchi A, Nag S, Bardhan S, Bhattacharyya P. Profile of respiratory problems in patients presenting to a referral pulmonary clinic. Lung India. 2008 Jan-Mar; 25(1): 4–7. doi: 10.4103/0970-2113.44129.

17. Nair S, Abraham A, Ramachandran R, Mohan D, Kutty RV. Pattern and determinants of respiratory mortality in Kerala, South India. Int J Med Public Health 2014;4:467-71.

18. Zaman K, Baqui AH, Yunus M, Sack RB, Bateman OM, Chowdhury HR, Black RE. Acute respiratory infections in children: a community-based longitudinal study in rural Bangladesh. J Trop Pediatr. 1997 Jun;43(3):133-7..

19. Mahesh P A, Jayaraj B S, Prahlad S T, Chaya S K, Prabhakar A K, Agarwal A N, Jindal S K. Validation of a structured questionnaire for COPD and prevalence of

COPD in rural area of Mysore: A pilot study. Lung India 2009;26:63-9.

.....

How to cite this article?

Dubey A, Sharma P. Profile of respiratory problems in patients attending a tertiary care center OPD - A study from central India. *Int J Med Res Rev* 2015;3(7):743-747. doi: 10.17511/ijmrr.2015.i7.142.

……