The Pattern of Respiratory Diseases in a Tertiary Care Center

Amit Kumar[1], Manoj Kumar Agarwal[1], Rishi Kumar Saini[2], Rajesh Agarwal[3], Rajat Agarwal[4], Javed Khan[5]

ABSTRACT

Introduction: The diseases related to the respiratory system are commonly encountered now a days because of the number of factors, major reason include pollution outdoor as well as indoor. The number of patients suffering from the respiratory illness increasing day by day. So there is need to built the more improved healthcare planning for better health care facilities: this study will help us to analyze the demographic profile, pattern of respiratory diseases and outcome of admissions in the medical wards in a developing country.

Material and Methods: The medical records of patients admitted in the Pulmonary medicine department over a 2-year duration were collected and analyzed. The data collected that includes demographic profile, source of admission, pattern of respiratory diseases and outcome of admitted patients.

Results: There were 60414 patients were admitted in the tertiary care center during the study period among them 3337 (5.5%) of the patients were diagnosed with a respiratory condition. There were 2436 males and 901 females among the respiratory cases. 71% patients were admitted from OPD while 29% were admitted from Emergency Department. The most common complaints of patients was Cough 86.1% and Breathlessness 68.02%. Most of patients admitted in the Respiratory ward were >30years. Average stay in Respiratory ward was 5.2±2.5 days. About 65.8% of the patients were smokers. The commonest respiratory conditions were COPD (29.3%) followed by tuberculosis (26.8%) and pneumonia (14.8%). The commonest co-morbidity was Hypertension 319 (9.5%) followed by Diabetes Mellitus 168 (5.0%). More than 85% patients were discharged from Respiratory ward, 4.8% died and 6.8% patients discharged and referred to higher centers.

Conclusion: Infective conditions are the major reason for an Pulmonary medicine ward admission. Most common indication for admission was COPD followed by Tuberculosis. More than 85% of patients were improved and discharged.

Keywords: Respiratory Diseases, Pulmonary Ward, Infective Pathology

INTRODUCTION

Pulmonary medicine is that branch of Medicine which deals with the causes, diagnosis, prevention and treatment of diseases affecting the lungs. Respiratory complaints such as cough and dyspnoea are some of the commonest symptoms encountered in medicine.

Although Lungs are the internal organ but they are always in contact with the external environment through the upper respiratory tract, as lungs are mainly organs of gas exchange they will undergone the daily exposure of more than 7000L of air, as air is mixture of ambient gases and numerous other particles that includes dust, pollens, bacteria, viruses etc. Although the upper respiratory tract and lung has its defence mechanisms but some of the organisms will get success to overcome these protective mechanism and will reach to lungs causing respiratory diseases. The "Air" that we inhaled is a complex mixture of ambient gases and environmental particulates that also contains droplets which may contains pathogens are added when respiratory secretions are coughed or sneezed out by others, that will further increases the risk of infection. The diseases involving the respiratory system constitutes the major cause of morbidity and mortality in the world. The top four respiratory diseases, lower respiratory tract infections, chronic obstructive pulmonary disease (COPD), tuberculosis, and carcinoma of lung, are among the ten leading causes of mortality in the world.[2]

Chronic respiratory diseases affect the airways and other structures of the lung with chronic obstructive pulmonary disease (COPD) and bronchial asthma being the most common types of these diseases.[3]

So study aimed to analyze the demographic profile, pattern of respiratory diseases and outcome of admissions in the medical wards in a developing country.

MATERIAL AND METHODS

This study was carried out at the Pulmonary medicine ward, Rohilkhand Medical College and Hospital, Bareilly (U.P.) and included all cases admitted during the period of two year from Nov 2014 to Oct 2016.

Methods

The data were collected from patients or his relatives and the cases were followed up till discharged from Respiratory ward. All cases were subjected to the following protocols-

1) Detailed medical history was taken including source of admission.
2) Thorough clinical examination.
3) Chest X-ray (P.A or A.P according to circumstances).
4) ECG or ECHO and computerized tomography (CT) study if needed.
5) Arterial blood gas analysis if required.
6) Laboratory investigations: LFT and KFT, blood sugar levels, complete blood counts, serum electrolytes and other investigations as per requirements.
7) Treatment programme, length of stay was recorded for all cases. The Assessment of the outcome were studied such as- discharged, transferred to ward, discharged and referred to higher centre, death, left against medical advice (LAMA).

STATISTICAL ANALYSIS

Microsoft office 2007 was used for the statistical analysis.

[1]Associate Professor, [2]PG (Resident), [3]Professor, [4]Assistant Professor, [5]Senior Resident, Department of Pulmonary Medicine, Rohilkhand Medical College and Hospital, Bareilly- 243006, U.P, India

Corresponding author: Dr. Amit Kumar, Associate Professor, Department of Pulmonar Medicine, Rohilkhand Medical College and Hospital, Bareilly- 243006, U.P, India

78

International Journal of Contemporary Medical Research
Volume 4 | Issue 1 | January 2017 | ICV (2015): 77.83 | ISSN (Online): 2393-915X; (Print): 2454-7379

Descriptive statistics like mean and percentages were used to interpret the data.

RESULTS

3337 patients were admitted to Pulmonary medicine ward during two year period. There were 2436 (70%) males and 901 (30%) females.

The common respiratory symptoms were Cough in 124 (86.1%) followed by Dyspnoea 98 (68.02%), fever 66 (45.8%), chest pain 54 (37.6%), hemoptysis 12 (8.3%) and other symptoms constituted about 60 (41.6%) including palpitation, generalized weakness (figure-1).

In this study it was observed that 71% of patients were admitted from OPD while 29% of patients were referred from Emergency Department. In this hospital, the serious and critically ill patients are hospitalized in emergency department first, therefore 29% of patients were referred from Emergency Department (Figure-2). Cases were hospitalized for the following causes -

Includes COPD, Tuberculosis, pneumonia, asthma, ILD, pulmonary embolism, bronchiectasis, malignancies (Lung cancer) and complications of these diseases (table-1).

The duration of stay in Respiratory ward ranged from 2 to 38

	No. of patients (n=3337)	Percent %
COPD	977	29.3%
Tuberculosis	527	14.8%
Pneumonia	310	9.3%
Asthma	183	5.5%
Bronchiectasis	93	2.8%
ILD	136	4.1%
Pulmonary Embolism	894	26.8%
Lung cancer	210	6.3%

Table-1: Pattern of pulmonary diseases in Pulmonary medicine ward patients

Duration of stay	No. of patients (n=3337)
1-7 days	2643 (79.2%)
7-14 days	600 (18.0%)
>14 days	94 (2.8%)

Table-2: Duration of stay in Pulmonary medicine ward patients

Associated comorbidities	No. of patients (n=3337)
Hypertension	308 (9.2%)
Diabetes mellitus	163 (4.8%)
Septicaemia	86 (2.5%)
Heart failure	60 (1.7%)
Chronic liver disease	43 (1.2%)
Stroke	98 (2.9%)
Malignancy	22 (0.6%)

Table-3: Associated comorbidities

Outcome of Patients	No. of patients (n=3337)
Discharge	2873 (86.1%)
Discharge and Refer to higher center	227 (6.8%)
Death	161 (4.8%)
LAMA	76 (2.3%)

Table-4: Outcome of Patients admitted to Pulmonary medicine ward

days. The study showed that maximum duration of stay of 1 (77.4%) of patients was observed to be between 1-13 days. (Average duration- 5.2±2.5 days) (Table-2).

The comorbidities in this study noticed in 810 (24.3%) of patients, the common comorbidities were hypertension 319 (9.5%), diabetes mellitus 168 (5.0%), renal 89 (2.6%), hepatic 61 (1.8%), malignancy 44 (1.3%) and 2527 (75.7%) patients had no comorbidity while 136 (4.1%) patients were found to have others such as steroid toxicity (Table-3). Table-4 Shows the outcome of patients admitted to Pulmonary medicine ward.

DISCUSSION

This study was carried out to evaluate the clinical profile, pattern of disease, co-morbidities and outcome of patients admitted to Pulmonary medicine ward in a tertiary care centre RMCH Bareilly.

3337 patients were admitted to Pulmonary medicine ward, of them 2439 (70%) were males and 898 (30%) females, with M:F ratio of 2.7:1, while ratio of 3.5:1 was observed by sachdeva et al (2013).[4] The male preponderance was also observed by victor et al (2013)[5], sachdeva et al (2013)[4], soto-campos et al (2013)[6], omer s.almoudi (2006)[7] while female preponderance seen in B. R. Pokharel et al (2012).[8]

The age group of patients admitted in Pulmonary medicine ward is from 7 to 74 years and above but majority of the patients were from 30 to 60 years 2530 (75.8%), victor et al (2013)[5] and sachdeva et al (2013)[4] observed more than 65% and about 60% of the patients admitted in Pulmonary medicine ward were lies in the age group of 30 to 60 years respectively.

The mean age in this study was 48.6±12, the mean age of 50.64±15.7years was made by sachdeva et al (2013)[4] which
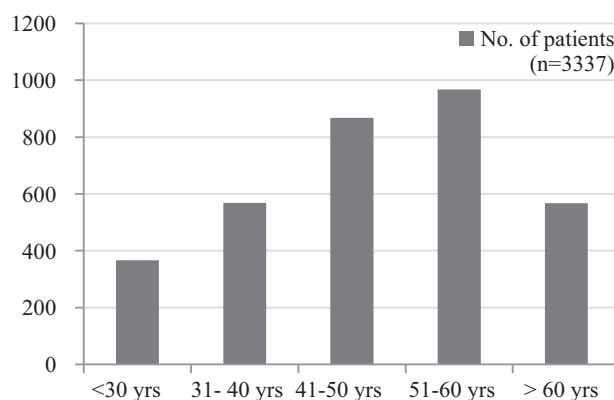

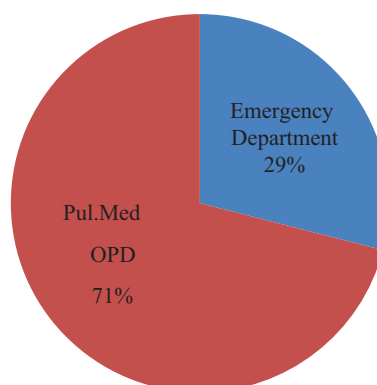**Figure-1:** Age distribution of study population

Figure-2: Sources of Patient Admission in Respiratory medicine ward

was similar to our study while mean age of 40.35±15 years was observed by victor et al (2013).[5]

As per observation, the majority of the patients are hospitalized in Pulmonary medicine ward from the OPD 2369 (71%), while 968 (29%) patients were referred from the Emergency department.

The majority of the admitted patients 2837 (86.11%) had the cough as the most prominent symptom (including dry as well as productive cough). The other common symptoms were breathlessness in 2269 (68.02%), fever in 1528 (45.83%) and other symptoms such as hemoptysis, palpitation, general debility, decreased appetite and weight loss in 2055 (61.66%) cases.

The indication for admission in Respiratory ward is patient having any cardinal symptoms of respiratory system or patient is having any respiratory system related problem.

With regards to the pattern of suffering of Respiratory ward patients from pulmonary diseases, the maximum percentage 977 (29.3%) had COPD followed by tuberculosis 894 (26.8%), pneumonia in 527 (14.8%), asthma in 310 (9.3%), bronchiectasis in 8 (5.5%), ILD in 6 (4.1), pulmonary embolism in 4 (2.8%) and others were 12 (8.3%) cases while sachdeva et al (2013)[4] observed tuberculosis as the most common sufferings in respiratory ward 217 (66.7%), followed by COPD 196 (20.2%) while Omer S.Almoudi (2000)[7] studied asthma as the most common sufferings in Pulmonary medicine ward 312 (38.6%) followed by COPD 139 (17.2%) (Table-1).

In our study, the majority of patients 2643 (79.2%) had stayed in Pulmonary medicine ward for duration of 1-7 days the similar observations was done by Omer S.Almoudi (2000)[7] with duration of stay between 1-7 days in 607 (75%) cases. The duration of stay was 8-14 days in 600 (18%) and >14 days in 94 (2.8%) of the patients. Thus the duration of stay in the study was between 1-20 days, the minimum duration being 2 days and maximum 38 days. The average duration of stay was 5.2±2.5 days similar to Sachdeva et al (2013)[4] 5.81±2.14 while higher average duration of stay (15.4±6.4 days) observed by victor et al (2013).[5]

The comorbidities in this study noticed in 810 (24.3%) of patients, the common comorbidities were hypertension 319 (9.5%), diabetes mellitus 168 (5.0%), renal 89 (2.6%), hepatic 61 (1.8%), malignancy 44 (1.3%) and 2527 (75.7%) patients had no comorbidity while 136 (4.1%) patients were found to have others such as steroid toxicity. The serious comorbidities increase the seriousness of the condition, duration of stay, complication and mortality rate Victor et al (2013)[5] noticed comorbidities in 156 (48%) cases.

The important aspect of the study was to observe the outcome of critically ill patients hospitalized in Pulmonary medicine ward of a tertiary care centre. Out of 3337 patients, the maximum number of the patients 2873 (86.1%) were discharged from the ward, 161 (4.8%) died and 76 (2.3%) left against medical advice (LAMA), 227 (6.8%) were discharged and referred to higher centre for further management.

CONCLUSION

Infective conditions are the major reason for the Pulmonary medicine ward admission. Most common indication for admission was COPD followed by Tuberculosis. More than 85%

of patients were improved and discharged, this will shows the pattern of diseases in pulmonary medicine ward further studies are required in the same directions to find out the changing patterns of respiratory diseases.

REFERENCES

1. Crofton and Douglas's Respiratory diseases, 5th Edition, 2000 : pg-83
2. R. Lozano, M. Naghavi, K. Foreman et al. 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. 2012;380:2095–2128.
3. Wu W, Kaminski N. Chronic lung diseases. Wiley Interdiscip Rev Syst Biol Med. 2009;1:298–308.
4. Sachdeva R, Sachdeva S, Gupta KB. Pattern and outcome of patients discharged from chest ward of a university hospital. Med J DY Patil Univ. 2013;6:240-4.
5. Victor Aniedi Umoh, Akaninyene Otu, Henry Okpa, and Emmanuel Effa. The Pattern of Respiratory Disease Morbidity and Mortality in a Tertiary Hospital in Southern-Eastern Nigeria. Hindawi Publishing Corporation Pulmonary Medicine Volume 2013;1-6.
6. Jose Gregorio Soto-Campos, Vicente Plaza, Joan B Soriano et al."Causes of death in asthma, COPD and non-respiratory hospitalized patients: a multicentric study" BMC Pulmonary Medicine. 2013;13-73.
7. O. S. Alamoudi. Prevalence of respiratory diseases in hospitalized patients in Saudi Arabia: a 5 years study 1996–2000. Annals of Thoracic Medicine. 2006;1:76–80.
8. B. R. Pokharel, S. Humagain Pant P, R. Gurung, R. Koju, and T. R. Bedi. Spectrum of diseases in a medical ward of a teaching hospital in a developing country. Journal of College of Medical Sciences-Nepal. 2012;8:7–11.