Original Research Paper

Volume-9 | Issue-3 | March-2019 | PRINT ISSN - 2249-555X

Pulmonary Medicine

STUDY OF RISK FACTORS ASSOCIATED WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE IN FEMALES

Dr. Maneesha P Postgraduate Department of pulmonary Medicine Alluri Sitarama, Raju Academy Of Medical Sciences Eluru, Andhra Pradesh 534005.

Dr. Sivaraj Karri* Postgraduate Department of pulmonary Medicine Alluri Sitarama, Raju Academy Of Medical Sciences Eluru, Andhra Pradesh 534005. *Corresponding Author

ABSTRACT **Background:** Chronic obstructive pulmonary disease is a devastating illness that causes great suffering in afflicted individuals and imposes an enormous burden to society.

Methods: It is a cross sectional study comprising hundred female patients with signs and symptoms of COPD and graded according to Global initiative for chronic obstructive lung disease (GOLD) spirometry strategy. For all the enrolled patients, clinical history was taken and investigations like chest X-ray, Spirometry were assessed.

RESULTS: The majority of cases belong to age group 50 to 60 years. Most of the cases are from rural area and illiterates. 4% of the COPD females were smokers. Among non smokers biomass fuel exposure is the major risk factor.

CONCLUSION: This study recognizes the prevalence of risk of biomass exposure in the development of COPD in women, especially from rural area. Health education on usage of cooking fuel is necessary to reduce the COPD incidence and prevalence. Considering COPD as a cause of shortness of breath in women with risk factors helps in early diagnosis and better management.

KEYWORDS :

INTRODUCTION

Chronic obstructive pulmonary disease (COPD) is a major health problem worldwide and is a leading cause of chronic morbidity and mortality throughout the world. In 2002 COPD was the fifth leading cause of death. Estimates show that COPD becomes the third leading cause of death worldwide by 2030[1].

For many years COPD was considered a disease of men, with higher global prevalence in men than in women. Today the number of women with COPD is rapidly increasing, and for the first time the number of deaths from COPD in women have surpassed those in men in the USA since 2000[2] and females seems to be more susceptible to the toxic effects of tobacco smoke than males.[3]

Tobacco smoking has been recognized as the most important risk factor for COPD for a long time. Other environmental risk factors associated with COPD are gaining more importance in etiology which include outdoor and indoor air pollution, occupational exposure to dusts and fumes, biomass smoke inhalation, exposure to second-hand smoke and past history of tuberculosis.[4]

So, this study is undertaken to study the risk factors in the development of COPD in women.

METHODS

100 females with chronic cough, sputum production, breathlessness, wheezing with history of exposure to risk factors of COPD with post-bronchodilator FEV1/FVC < 0.7 with reversibility <12% and <200ml were included in the study.

Bronchial asthma, Bronchiectasis, Active Pulmonary tuberculosis, Interstitial lung disease / Restrictive lung disease, Any abdomen, chest, thigh surgery in last 3 months, Women in the last trimester of pregnancy, Acute left ventricular failure, Ischemic heart disease, Pulmonary edema in last 3 months, Use of bronchodilators in the last 6 hours are excluded from the study.

For all 100 patients detailed clinical history was taken and through examination was done and investigations like chest X-ray, Spiromery, sputum examination were assessed.

RESULTS

The mean age of study population is 54.9± 9.12. Most of the patients (69%) were from rural area.

In this study, majority of patients have history of exposure to biomass fuel exposure (59). History of exposure to smoking was seen in only 5 female.

Table – 1 Risk factors of COPD in females

Exposure	Number of patients	Percentage
Smoking(alone)	5	5
Biomass fuel (alone)	24	24
ETS (alone)	19	19
Tuberculosis (alone)	10	10
Occupation (alone)	5	5
Biomass fuel + ETS	31	31
Biomass fuel + Occupation	3	3
ETS +Occupation	2	2
Biomass fuel + ETS + Occupation	1	1
Total	100	100

Environmental Tobacco Smoke (ETS) exposure was present in 53 females. Out of which 22 had ETS exposure for <20 years and 32 for >20 years Mean duration of illness was 5.29 + 2.9 years. In majority (59%) of the patients the duration was < 5 years and in the remaining (41%) it was > 5 years.

Dyspnoea graded by mMrc showed most of patients (48%) belong to grade-III shortness, 27% belong to Grade-II, 15% to grade-IV, 9% to grade-I and 1% to grade-0.

.

Cough, sputum and shortness of breath were present in all the patients (100%), while the rest of the symptoms like wheezing in 48%, chest pain in 12%, fever in 13%, swelling of feet in 16% and weight loss in 6% of the patients.

On pulmonary function testing mean pre-FEV1 was 1.94 + 5.4, pre FVC was 2.41 + 0.6 and pre FEV1/FVC was 54. 9 ± 14.7, post FEV1 was 1.45 + 0.54. Pre-FEV1 and post-FEV1 change was significant statistically (pre-FEV1 -1.94 + 5.4, post FEV1 - 1.45 + 0.54 p value < 0.001).

GOLD severity staging showed majority of cases (43%) were in GOLD stage II, 27% were in GOLD stage III, 16% in GOLD stage IV, 14% in GOLD stage I.

34 patients had complications.12 patients experienced corpulmonale, 8 patients had pneumonia and 14 patients experienced type-II respiratory failure.

In the present study, out of 100 patients, 32 were treated on outpatient basis, 68 patients were admitted in the hospital. Of these 68 patients, 8 were treated in Intensive care unit, 60 were treated in ward.

All the 32 out patients improved clinically and no deaths occured. Out

of 68 admissions, 61 patients improved clinically and discharged, 7 deaths reported.

DISCUSSION

Chronic obstructive pulmonary disease (COPD) is one of the major causes of chronic morbidity and mortality throughout the world. Today the number of women with COPD is rapidly increasing and as the awareness of ill effects of tobacco smoking has increased, prevalence of tobacco smoking is coming down. However, prevalence of COPD is increasing. This suggests that other risk factors of COPD are gaining more importance in etiology which include outdoor and indoor air pollution, occupational exposure to dusts and fumes, biomass smoke inhalation, exposure to second-hand smoke and past history of tuberculosis.

Hence the present study was undertaken to study the risk factors associated with COPD and the disease severity in them.

The mean (SD) age of study group was 54.9± 9.12 with an age range of 51 – 60 years. It is similar to that in studies by N.K.Jain et al[5] and Torres J.P et al[6] where the average age of the patients enrolled was >50 years. In the present study, 69% subjects were from rural background. which was comparable to O. Moran –Mendoza[7] (71%) and Goel S et al[8] study (72.73%).

History of smoking seen in only 5% and remaining 95% were non-smokers similar to the study by S.K.Jindal[9]

Goel S et al study[8] was a population based survey conducted in rural and urban areas of shimla district where asymptomatic patients were also included resulting in increased biomass exposure (75.7%).In the current study, only symptomatic patients were included, so the exposure was less compared to Goel S et al study.

Most of the women in the present study were associated with exposure to biomass fuels. The prevalence of COPD in women using biomass fuels alone was 24% which increased to 31% when there was combined exposure of biomass fuel and environmental tobacco smoking, thus demonstrating an additive effect similar to Mahesh et al study where the prevalence of COPD in women using biomass fuels alone was 3.9% and increased to 4.8% when there was combined exposure to biomass fuels and passive smoking.

In N.K Jain et al and J.Sandoval et al studies, most common symptom at presentation was breathlessness (100%) seen in all the patients.

In the present study, average pre FEV1 was 1.95 ± 5.4, average pre FVC was 2.41± 0.6 and Pre FEV1/FVC was 54.9 ± 14.7 which were comparable to Birring et al study.

Most of the patients (43%) had GOLD-II severity in the present study, which is comparable to Parasuramulu et al study [23] where 42.6% of them had moderate obstruction and in Inga – cecilie et al study, 55.5 %had moderate obstruction.

CONCLUSION

COPD can occurs at younger age in women. Health education on usage of cooking fuel is necessary to reduce the COPD incidence and prevalence especially in rural areas. Considering COPD as a cause of shortness of breath in women with risk factors helps in early diagnosis and better management.

REFERENCES

1. World Health Report Geneva: World Health Organisation. Available from URL:http://www.who.int/mediacentre/factsheets/fs315/en/ Updated January 2015.
2. Mannino DM, Homa DM, Akinbami LJ, et al. Chronic obstructive pulmonary disease surveillance in United States, 1971-2000. MMWR Surveillance Summaries 2002;51:1-16.
3. M.V. Lopez Varela, M. Montes de Oca, R.J. Halbert et al.Sex-related differences in COPD in five Latin American cities: the PLATINO study, EurRespir J 2010; 36: 1034–1041.
4. V.K.Vijayan, Chronic obstructive pulmonary disease, Indian J Med Res 2013; 137(2):251-269.
5. N. K. Jain, M. S. Thakkar, N. Jain et al.. Chronic obstructive pulmonary disease: Does gender really matter? Lung India. 2011; 28(4): 258–262.
6. Torres JP, Ciro Casanova, Garcini AM et al Gender and respiratory factors associated with dyspnea in chronic obstructive pulmonary disease Respiratory Research 2007, 8:18:1-7.
7. O.Moran-Mendoza J.R. Pérez-Padilla, M. Salazar-Floreseal Wood smoke-associated lung disease: a clinical, functional, radiological and pathological description Int J Tuberc Lung Dis; 2008 12(9):1092–1098.
8. SonuGoel, Gupta BP, Kashyap S et al Epidemiological Aspects of Chronic Bronchitis in Shimla Hills .Indian J Chest Dis Allied Sci 2007; 49: 143-147.
9. Surinder K Jindal. Emergence of COPD as an epidemic in India. Indian Journalof Med Res 2006 Dec;124:619-30.