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A CROSS-SECTIONAL STUDY TO FINDOUT THE MAJOR ETIOLOGICAL FACTOR BEHIND THE UPSURGE AND PREVALENCE OF COPD CASES IN KASHMIR

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ABSTRACT

COPD is projected to move from sixth to the third most common cause of death worldwide within next twenty years, whilst rising from fourth to third in terms of morbidity within the same time. The study was done with the objectives to study the major etiological factor behind upsurge & prevalence of COPD in Kashmir & to suggest early preventive steps for control of COPD. A community based cross sectional study was carried out to measure the prevalence of COPD in men and women greater than 45 years of age. The study was conducted purposively in South Kashmir's Pulwama District in Jammu and Kashmir.The study was carried out in both rural and urban areas, with Main Town Pulwama representing the urban population & various villages of Pulwama representing the rural population. The multi-stage sampling was adopted for study with total of 100 study population (greater than 45years of age) was taken up for the study. The subjects were included, in the study only after obtaining their written consent. Questionnaire was set regarding the symptomatology of COPD like presence of cough, breathlessness, wheezing etc. The subjects who were positive for these symptoms did undergo x-ray chest and Spirometry. A total of 100 study subjects were diagnosed as having COPD Out of the total study population of 100; among the subjects most common symptom was cough present in 64.The Results indicated about 85% Pateint's were smokers.The revelation of COPD should give an impetus to take remedial measures at the very outset; thereby playing a distinctive role in prevention. There is an increasing trend of developing smoking habits in both males and females after the age of puberty. This has given an increased population of COPD

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INTRODUCTION

COPD has been defined as disease, characterized by airflow limitation that is not fully reversible with a post bronchodilator ratio of forced expiratory volume in one second to forced vital capacity (FEV1)/FVC of <0.7), by the Global Initiative for Chronic Obstructive Lung Disease (GOLD) and International collaborative effort to improve awareness, diagnosis and treatment of COPD.COPD includes emphysema, an anatomically defined condition characterized by destruction and enlargement of the lung alveoli. Chronic bronchitis, a clinically defined condition with chronic cough and phelgem and small airway disease, a condition in which small bronchi are narrowed. Within the next twenty years COPD is projected to move from sixth to the third most common cause of death worldwide, whilst rising from fourth to third in terms of morbidity within the same time. An association between the prevalence of COPD and low Socio-economic cases has also been found.

Various extra pulmonary side effects of COPD are as follows:

1. Weight loss.
2. Cachexia.
3. Skeletal muscle dysfunction which is due to Sedentary life style. Due to shortness of breath during exercise, patients with COPD often adopt a sedentary life style; physical inactivity causes net loss of muscle mass, reduces the force generating capacity of muscle and Decreases its resistance to fatigue.
   a. Tissue hypoxia.
   b. Systemic inflammation.
   c. Oxidative stress.
   d. Tobacco smoke.
4. Skelton muscle dysfunction has two obvious consequences.
   a. Weight loss
   b. One of the main causes of exercise limitation.
   c. Cardiovascular effects.
   d. Coronary artery disease.
   e. Cor pulmonale, CCF.

f. Endothelial damage.
5. Nervous System effects.
a. Altered bio-energetic metabolism within brain.
b. High prevalence of depression.
c. Abnormal autonomic control in patients with COPD.
6. Osteoporosis.

COPD varies with age and smoking status,Occurring rarely in individuals < 40 years old, and less frequently in nonsmokers.The most recent Guidelines, presented by the Global Initiative for Obstructive Lung Disease, list an FEV1/FVC<O.70 as criterion for COPD.With this background the study was done with the objectives to study the major etiological factor behind upsurge & prevalence of COPD in Kashmir & to suggest early preventive steps for control of COPD.

MATERIAL AND METHOD'S

A community based cross sectional study was carried out to measure the prevalence of COPD in men and women greater than 45 years of age.The study was purposively conducted in South Kashmir's Pulwama District in Jammu and Kashmir.The study was carried out in both rural and urban areas, with Main Town Pulwama representing the urban population & various villages of Pulwama representing the rural population.The multi-stage sampling was adopted for study with total of 100 study population (greater than 45years of age) was taken up for the study. The subjects were included, in the study only after obtaining their written consent. Questionnaire was set regarding the symptomatology of COPD like presence of cough, breathlessness, wheezing etc. The subjects who were positive for these symptoms did undergo x-ray chest and Spirometry. A total of 100 study subjects were diagnosed as having COPD.

PFT and Dyspnoea Scoring*:* The tests were carried out with the help of the medispiro and medikro electronic spirometers.

Man oeuvre Performance*:* After measuring the weight and height of the subjects we initially instructed and demonstrated the test to the subject, to include;

1. Corrected posture with head slightly elevated.
2. To inhale rapidly and completely.
3. Positioning of the mouth piece.
4. Exhale with maximum force.

After demonstration we allowed the subjects to perform the test by asking them to assume the correct posture. We attached the nose clip and placed the mouth piece in the mouth and asked the subjects to close the lips around it. Then we asked the subjects to inhale completely and rapidly with a pause of < 1 sec. at TLC. Subjects later exhaled until no more air could be expelled while maintaining an upright posture. The subject was asked to blast not just to blow the air from their lungs and then was encouraged to exhale as completely as possible. Test was repeated for a minimum of three manoeuvres. The subjects were asked To make a full expiratory and inspiratory loop as a single man oeuvre. The maneuver accepted was confirmed by flow volume plot and volume time plot in accordance with 2005 ATS recommendations from the printed volumes and graphs. Three readings were taken For each; the best of these three readings was Incorporated in the study with the apparatus making BPTS corrections automatically. The tests were carried out between 17° and 40° as recommended by 1987 ATS update. Dyspnea scoring was done using a medical Council scale.

Medical Research Council (MRC) Dyspnoea Scales:

1. Grade-1 Breathlessness with strenuous exercise.
2. Grade-2 Breathless when hurrying on a level Or going uphill.
3. Grade 3 Breathless while walking on a level at one's own pace.
4. Grade 4 Breathless while walking 100 yards or after a few minutes on a level.
5. Grade 5 Breathless to the extent that a person is not able to leave his house.

Patients with grade 3-5 correspond to moderate to severely disabling COPD. Further following routine investigations were done (wherever required).

- Hb, TLC, DLC, ESR, PBF, BT CT.
- ECG
- X-ray chest (P/A view)

OBSERVATION AND RESULT'S

The majority of COPD patients, specifically 84 individuals (84%), were aged 45 years and above.Out of the total COPD patients, 71% were males, 29 % belonged to the Muslim Religion, and had a monthly income between 5000-11000.Out of the 15% individuals did not have any personal habits. Out of the total of 100 COPD patients, 69% did not have a family history of lung diseases. Out of the total 100 patients 96 Pateint's are illiterate and did not obtain any health information about the prevention of Chronic Obstructive Pulmonary Disease. The Table-1and Fig-1 shows the distribution of respiratory symptoms of the studied population. Most Common symptom was cough present in (64%) while as expectoration was present in (13%) also shortness of breath was present in (13%) and wheezing was present in (7%) Patients.

Table 1. Distribution of Respiratory Symptoms in the studied population

Symptom	No.of Patients	Percentage %
Cough	64	64%
Expectoration	16	16%
Shortness of breath	13	13%
Wheezing	7	7%

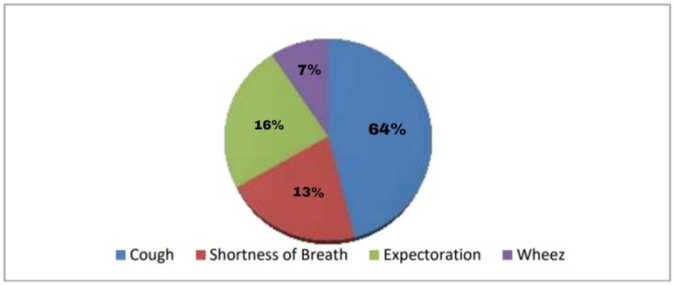

Fig. 1. Distribution of Respiratory Symptoms in the studied population

The Fig-2: Shows among the COPD patients In the studied population, 84 were found smoker's. Out of total, 10 were affected with severe air pollution and natural hazards while as 4 and 2 were affected with exposing themselves to toxic chemical substances and other factors well.

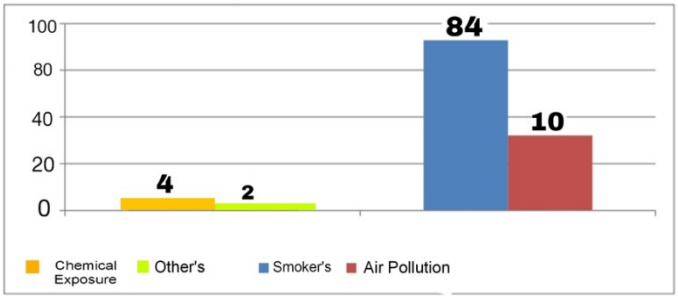

Fig. 2. Distribution of Main Causes of COPD

DISCUSSION

The present study revealed 12.1% of the studied population had respiratory symptoms. Among the various respiratory symptoms in the studied population chronic cough was the most common (64%) followed by expectoration (4.7%). The results of our study are similar with the findings of study conducted by Pragiti Chabara et al.; at urban Delhi found the prevalence of chronic cough, cough phelgem and dyspnoea was 2.01%, 1.02% and 3.4% respectively.The prevalence of COPD in our study came out to be 6.3% after being confirmed with spirometry.Among the subjects with these symptoms, COPD in male was 7.9% and in females 4.7%. Our Endings are consistent with PA Mahesh, BS Jayaraji et al.; who observed a prevalence of COPD in rural area of Mysore of 7.1% with males 11.1% and females 4.5%. Our study also displayed consistent increase in the prevalence with age. Same results were found by Pragiti Chabbara et al. who also observed in their study worsening of symptoms with increasing age.The prevalence of COPD was found more in smokers than non-smokers with 13.9% in smokers and 3.9% in non-smokers, and More in males than females.

CONCLUSION

The study was conducted on 100 subjects with 71 males and 29 females.The revelation of COPD should give an impetus to take remedial measures at the very outset; thereby playing a distinctive role in prevention.There is an increasing trend of developing smoking habits in both males and females after the age of puberty. This has given an increased population of COPD patients.We have deduced this in our study and this is helpful in prompting us to educate regarding the ill effects of smoking and Air Pollution and thereby preventing the heavy burden of COPD.

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