

MANAGEMENT OF COPD

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Abstract

The main purpose of study is to assess the MANAGEMENT OF COPD. Many studies shows that it is not a curable disease but it can be made stable by proper management. COPD patients require ongoing support rather than repeatedly attending formal hospital. It is a descriptive study of 20 patients of Gulab Devi Hospital. Patient's data was collected to observe their medical history such as diagnosis, treatment, and medication. The smoking history and occupational history was observed as well which guides in reducing risk factors. Occurrence of disease in both genders is found to be random and it occurs in all age groups but more common in males. It is seen that the management of COPD depends on an individual assessment of disease severity and response to various therapies. Oxygen therapy, bronchodilators and antibiotics are mostly used treatments for its management.

Keywords: Antibiotics, Bronchodilators, Genders, Management of COPD, Ongoing support, Oxygen Therapy

INTRODUCTION:

Chronic Obstructive Pulmonary Disease (COPD) is an umbrella term used to describe chronic lung diseases that cause limitations in lung airflow. COPD can cause coughing that produces large amounts of mucus production, wheezing, shortness of breath, chest tightness, etc. Cigarette smoking is the leading cause of COPD. Tobacco smoking and particulate air are the most common risk factors. Here we are going to review the literature about the management of COPD. COPD or chronic obstructive pulmonary disease is a progressive disease that makes it hard to breathe. (<http://www.nhlbi.nih.gov/health/dci/Diseases/Copd/Copd>).

It is a lung disease characterized by chronic obstruction of lung airflow that interferes with normal breathing and is not fully reversible. The terms like emphysema and chronic bronchitis are included under the diagnosis of COPD. It is not simply a "smoker's cough" but a life-threatening lung disease. (<http://www.who.int/respiratory/copd/definition/en/index.html>).

We can also say it as a respiratory syndrome associated with a progressive, non-reversible limitation to airflow and abnormal inflammatory responses involving the small airways [1].

The irritating gases and the particles specially produced by smoking are the main cause of COPD. These gases and particles injure the airways and lungs and cause swelling that causes inflammation. They, thus damage the

lungs. This lung damage makes it more difficult to breathe in and out. (<http://respiratory-lung.health-cares.net/copd-prevention.php>)

The independence of smoking status suggest that the progression of COPD is strongly associated with an increase in the volume of tissue in the airway wall due to a repair or remodeling process and the resultant accumulation of inflammatory mucus exudates in the lumen [2]

The most common symptoms of COPD include Coughing and Spitting up of phlegm. Besides that wheezing, Shortness of breath with activity or even at rest, and Fatigue are also included in the symptoms of COPD. [3]

The diagnosis of COPD should be considered in any patient who has the following: symptoms of cough; sputum production; or dyspnea; or history of exposure to risk factors for the disease. The diagnosis requires spirometry; a post-bronchodilator forced expiratory volume in one second (FEV₁)/forced vital capacity (FVC) 0.7 confirms the presence of airflow limitation. In addition to the FEV₁, the body mass index (BMI) and dyspnoea have proved useful in predicting outcomes such as survival, and this document recommends that they be evaluated in all patients. [4]

The pathophysiology of COPD is not entirely understood. Chronic inflammation of the cells lining the bronchial tree plays a major role. Smoking and, other inhaled irritants, perpetuates an ongoing inflammatory response that results in airway narrowing and

hyperactivity. Airways become edematous, excessive mucus production occurs and cilia function weakly. Patients face increasing difficulty clearing secretions with disease progression. Coughing and splitting up phlegm is the main symptoms of COPD. The physiology of COPD shows that air gets trapped in alveoli and causes obstruction during expiration. Wide ribs also show occurrence of COPD. Accordingly, they develop a chronic productive cough, wheezing and dyspnea.[5]

The basic pathophysiology process in COPD consists of increased resistance to airflow, loss of elastic recoil and decreased expiratory flow rate. The alveolar walls frequently break because of the increased resistance of airflows. The alveolar walls frequently break because of the increased resistance to airflows. The hyper inflated lungs flatten the curvature of the diaphragm and enlarge the rib cage. The altered configuration of the chest cavity places the respiratory muscles, including the diaphragm, at a mechanical disadvantage and impairs their force-generating capacity. Consequently the metabolic work of breathing increasing, and the sensation of dyspnea heightens. (<http://ezinearticles.com/?Pathophysiology-of-COPD&id=408861>)

The management of COPD includes all those methods that dilate the airway narrowing. Smoking cessation may lead to minimal improvements in lung function. Cessations of smoking, controlling occupational environment, antibiotic use, bronchodilators are some of the therapies beneficial in treatment of COPD. [6]. Beta2 agonist, Anticholinergic Agents, Combination therapy helps in managing COPD [7]. Repetitive phlebotomy improves the pulmonary haemodynamics, gas exchange, and functional capacity in patients with COPD [8]. Mucolytics may reduce the frequency and duration of exacerbations [9]

Exacerbation is an increase in the severity of the disease. Medical history, examination, spirometry and, in severe cases, blood gas measurements, chest x-rays and electrocardiography all tells us about the level or severity of a disease. An acute exacerbation

includes increased sputum, increase in airflow limitation, inflammation. Hypoxia etc. [10] apart from these, Controlled oxygen delivery (28%, or 0.5–2.0 L/min) is indicated for hypoxemia [11]. Acute exacerbations of chronic obstructive pulmonary disease (COPD) are treated with oxygen, inhaled beta2 agonists, inhaled anticholinergics, antibiotics and systemic corticosteroids. [12].

The use of systemic corticosteroids, antibiotics and NPPV (non invasive positive pressure ventilation) during exacerbation decreased treatment failure rate and decreases the hospital stay [13]. These exacerbations are generally the result of respiratory infections so will usually need treatment with antibiotics [14]. Inhaled bronchodilators are effective treatments for acute exacerbations [15] Long-term oxygen therapy also reduces mortality in COPD [16] Improving survival in chronic obstructive pulmonary disease (COPD) remains an elusive goal. Only smoking cessation and oxygen therapy have prolonged life. It is possible that lung volume reduction surgery may prolong life in selected subsets of patients [17].

COPD comes in the top ten causes of deaths in Pakistan.4% of the annually deaths in Pakistan are due to this disease (http://chestsociety.com/copd_day.aspx).

COPD is a disease of lungs that blocks the airway and produces difficulty in breathing. Smoking is the main cause of it. Various factors are used for managing COPD, while in emergency situation; oxygen therapy is the most feasible technique. The amount of oxygen given also matters. Other factors used in the management include antibiotics, corticosteroids. COPD is the major cause of mortality in Pakistan

An effective COPD management plan included four components: Assess and monitor disease, Reduce risk factors, Manage stable COPD, Manage exacerbations. The WHO leads the Global Alliance against Chronic Respiratory Diseases (GARD), which is a voluntary alliance of national and international organization, institutions and agencies from a range of countries working towards a common goal of improving global lung health. The

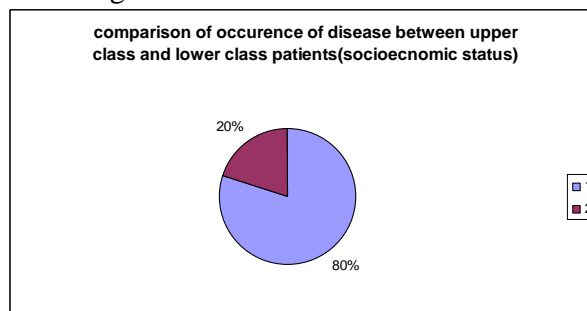
COPD is ranked as the fifth leading cause of death, exceeded only by heart disease, stroke, lung cancer and lower respiratory tract infections. (www.who.org)

STUDY DESIGN

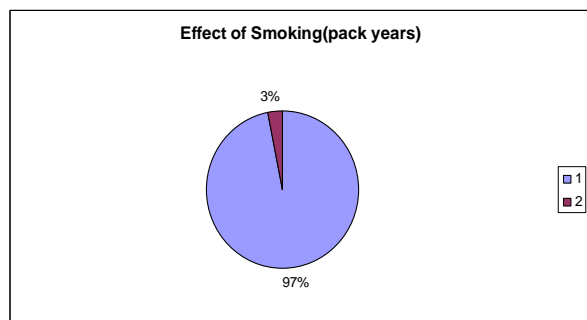
- I. **Data collection site.** The data was collected from Gulab Devi Hospital situated in Lahore, Pakistan, which was specialized institute for chest disease.
- II. **Sample size.** A total of 20 patients having COPD were enrolled
- III. **Data collection tool.** A Performa was designed to record the patient’s history; their treatment and management techniques were followed.
- IV. **Method.** It is a retrospective study taken from Gulab Devi Hospital, which includes a total of 20 patients having COPD. The data was analyzed for assessing the management of COPD. The forms included the history profile and the present medication used. They were asked about their treatments and their outcomes. Their prescriptions were checked and OTC medications if taken were also noted.
- V. **Inclusion and Exclusion criteria.** Consider some points in reference to select the patients. For that purpose we adopted inclusion-exclusion criteria for patients. That was:
 - **Inclusion criteria:**
Both the males and the females were included in the study. The COPD patients along with other diseases such as hypertension, asthma etc was also included in the study. The age limits were above 35.
 - **Exclusion criteria**
Recent exuberated patients were excluded from the study and the patients whose ages was less than 35 were also excluded

RESULT

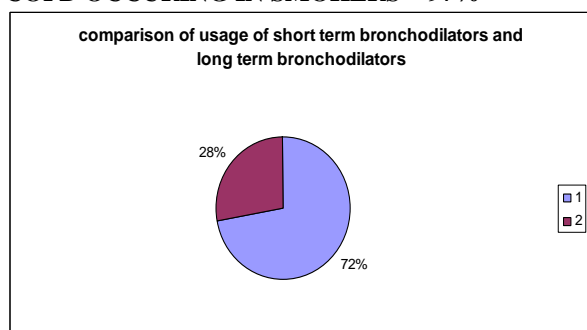
Data of 20 patients having COPD was taken by filling the mentioned form and then observed. The patients were from Gulab Devi hospital. The parameters were observed which shows the following results.



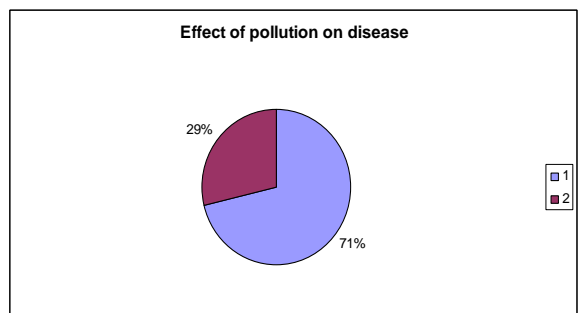
MIDDLE CLASS PATIENTS: 20%
LOWER CLASS PATIENTS: 80%



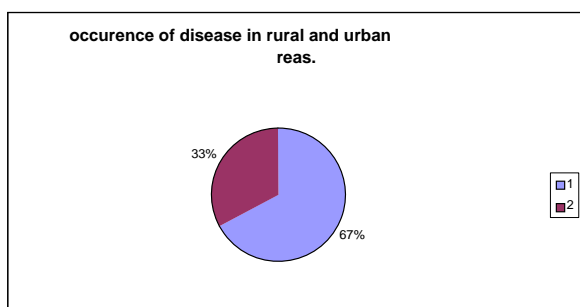
COPD OCCURING IN SMOKERS = 97%



PATIENTS USING LONG TERM BRONCHIODILATORS= 72% OTHERS = 28%

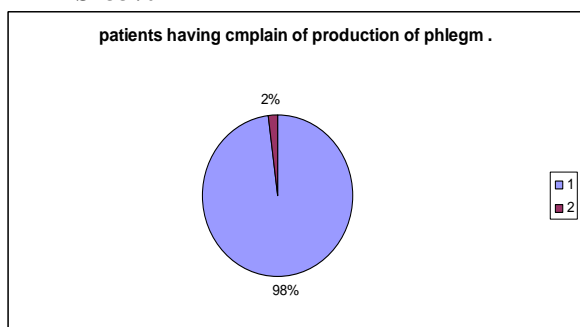


EFFECT OF POLLUTION ON DISEASE= 71%

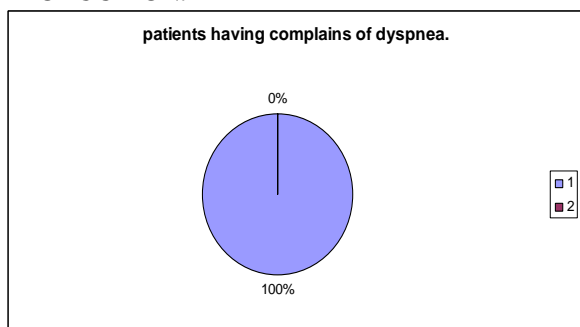


DISEASE IN PATIENTS LIVING IN RURAL AREAS=67%

DISEASE IN PATIENTS LIVING IN URBAN AREAS=33%



98% PATIENTS COMPLAINS ABOUT PHLEGM PRODUCTION.



100% PATIENTS COMPLAINS OF DYSPNEA.

DISCUSSION:

COPD is a lung disease and the most common symptoms include dyspnea. This is because the air gets entrapped into the alveoli, resulting in difficulty in breathing. It is usually diagnosed late in its course due to absence of symptoms in the beginning. Smoking is the risk factor for this particular disease. Smoking cessation is the only most effective way to reduce risk. The patient must be advised and insisted to quit smoking to avoid harmful consequences. Exposure to pollution also affects this disease. Indoor pollution such as biomass, fuels etc also

contribute toward the prevalence of COPD. The patients were from rural area, mostly doing labor and cultivation. The pollens are also the allergen causing COPD. COPD risk factors also include family history, socioeconomic status as well. Obesity contributes to breathlessness so; vigorous exercise in polluted environment must be avoided. While, weight loss is also seen in COPD patients. Bronchodilators are used mainly for symptomatic treatment of COPD They help reducing the symptoms. It has been seen that COPD is never cured but the symptoms can be reduced. Regular treatment with long-term bronchodilators is more effective than using short-term bronchodilators. COPD flare-ups can be caused by viral infections (for example, the flu) or bacterial infections. So, antibiotics are also prescribed in addition to bronchodilators. Beside that oxygen therapy has proven life saving for exacerbations. The proper management of an exacerbation of COPD requires knowledge of the usual causes of exacerbations. The previous condition of the patient must be considered. Such patients are treated in the emergency department of the hospital, and oxygen therapy is the instant treatment given to emergency patients. They are afterward shifted to the other departments of the hospital. Corticosteroids are given sometimes but its oral dose may cause many side effects that is why inhalation route is selected for given it.

CONCLUSION

Although COPD can never be cured, but some therapies help in improving the patient's quality of life. The purpose of the study was to explore the management of COPD in Pakistan and see in which conditions the patients come to hospital and how they are managed, which therapy they are suggested and to see the side effects if any. From this descriptive study in Gulab Devi Hospital we concluded that the facilities for testing and managing the disease COPD are not available in villages in Pakistan. And even in cities, only a few large hospitals are having the equipments like spirometers, which examines the depth of a person's breath

and the manner and pace of air's movement into and out of his/her lungs. Such instruments must be bought for the institutes and used for proper diagnosis of the disease, as proper diagnosis is the key step for therapy continuation. Although fight against this ailment is at a low pace in Pakistan, attempts are being made to create awareness among the masses and relevant activities, campaigns and camps and free medical check-ups are being organized. The role of the pharmacist must be there in selecting an appropriate drug for the patient according to his/her condition. Pharmacists are at a place to educate and provide information about the best drug therapy.

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