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A STUDY ON COPD PATIENTS IN TERTIARY CARE TEACHING HOSPITAL

General Medicine

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ABSTRACT

Aim ;- To Study the Adverse effects, risk factors, treatment pattern of COPD patients in tertiary care teaching hospital.

Background:- Chronic obstructive pulmonary disease (COPD) is a type of obstructive lung disease characterized by long-term breathing problems and poor airflow. The main symptoms include shortness of breath and cough with sputum production. COPD is a progressive disease, meaning it typically worsens over time. Eventually everyday activities such as walking or getting dressed become difficult. Chronic bronchitis and emphysema are older terms used for different types of COPD. The term "chronic bronchitis" is still used to define a productive cough that is present for at least three months each year for two years.

Materials and methods: An Observational Study at AC Subba reddy Government medical college, Nellore,.duration was 6 months with 108 patients,patients are enrolled in the study based on the inclusion and exclusion criteria

Results: Quality of life is a standard of health, comfort, and happiness experienced by an individual or a group. Factor affecting the quality of life include non-compliance, ADR's, lack of nutritious diet and lack of exercises. So monitoring and adverse drug reactions and management will improve the quality of life to some extent. The QOL of patient suffering from COPD is affected and impact is in the worse in the COPD drugs. Hence the prompt treatment of and early diagnosis of COPD will reduces the disease severity and improve the quality of life.

Conclusion: An advanced age (>60 years), poor socioeconomic status, smoking, and moderate to severe forms of the disease may be responsible for this. It is recommended that besides providing an optimum drug treatment that relieves the current symptoms of the disease, attempts should also be made to enable the patient to remain physically self-dependent. In addition,a psycho-social support will also be required to obtain a significant improvement in quality-of-life.

KEYWORDS

COPD, Tuberculosis, Quality of life

BACKGROUND

Chronic obstructive pulmonary disease (COPD) is a type of obstructive lung disease characterized by long-term breathing problems and poor airflow.[2,8] The main symptoms include shortness of breath and cough with sputum production[1]. COPD is a progressive disease, meaning it typically worsens over time[9]. Eventually everyday activities such as walking or getting dressed, become difficult[3]. Chronic bronchitis and emphysema are older terms used for different types of COPD[3,10]. The term "chronic bronchitis" is still used to define a productive cough that is present for at least three months each year for two years[1].

Tobacco smoking is the most common cause of COPD, with factors such as air pollution and genetics playing a smaller role[2]. In the developing world, one of the common sources of air pollution is poorly vented heating and cooking fires[3]. Long-term exposure to these irritants causes an inflammatory response in the lungs, resulting in narrowing of the small airways and breakdown of lung tissue[5]. The diagnosis is based on poor airflow as measured by lung function tests[4]. In contrast to asthma, the airflow reduction does not improve much with the use of a bronchodilator[3].

Most cases of COPD can be prevented by reducing exposure to risk factors. This includes decreasing rates of smoking and improving indoor and outdoor air quality[3]. While treatment can slow worsening, no cure is known[3]. COPD treatments include smoking cessation, vaccinations, respiratory rehabilitation, and often inhaled bronchodilators and steroids[2]. Some people may benefit from long-term oxygen therapy or lung transplantation[5]. In those who have periods of acute worsening, increased use of medications and hospitalization may be needed.

Renard et.al, (2012) conducted an "study design on International survey of 8 countries to identify subjects to had the diagnose with COPD and to quantify the burden of COPD (2000)".Subject with ≥10 pack –years(cumulative cigarettes consumption, based on cigarettes smoked per day and years of daily smoking) who had been diagnose with COPD and emphysema or chronic bronchitis .The long duration of treatment and defaulters are major challenges for successful outcome.

Soriano et.al, in the year of 2012 conducted "Aimed to study the Retrospective analysis of cross sectional NHANES III survey conducted in the USA including questionnaire and spirometry. And the methods choosed was success to treat the patient with self reported physician diagnosis of chronic bronchitis.

AL-Hazmi et.al,(2011) conducted "Multicentre, two state study (six Canadian locations) to access air flow obstruction (reversible = asthma , not entirely reversible= COPD, 2100, 449 randomly selected adults were sent ECRHS questionnaire, which 18616 completed. In the year of 2011.

Gershan et.al, (2007) conducted "study on population based cohort from administrative health information system (2007)". The total 7082086 in database population (denominator), 708, 743 with COPD; 51.8% female; aged ≥ 35 years. In these cohort studies the method used for patients are ICD 9 codes 491, 492, 496, and ICD 10 codes J41, J42, J43, J44. The percentage mean value of ≥35 is 9.5.

MATERIALS AND METHODS

STUDY DESIGN:

An Observational Study at AC Subba reddy Government medical college, Nellore,.duration was 6 months with 108 patients,patients are enrolled in the study based on the inclusion and exclusion criteria.

INCLUSION CRITERIA:

Patients who are willing to participate in the study were included.
Patients with diagnosis of COPD.
Patient who are above 14 years age were included.
Patient who were short course of regimen were included.
Patients with co morbidity like diabetes mellitus and hypertension etc.

EXCLUSION CRITERIA:

Patients who are below 14 years age were excluded.
Pregnancy and lactating mothers were excluded.
Patients who are not willing to participate in the study were excluded.

STATISTICAL ANALYSIS:

Student t test were used for the analysis.

METHOD FOR THE STUDY:

Based on the inclusion criteria patients were enrolled in the study patient data such as demography details and medical history, will be collected from patient
data collection form.

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Follow up will be done for every two months during the treatment for the prognosis.

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For each follow up ADR's of COPD drugs were monitored by using naranjo's scale and noted.

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These ADR's are classified as definite, certain, probable, possible and unlikely.

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Assessing the effect of quality of life due to the ADR's.

↓

Monitor the ADR management.

↓

Outcomes for the ADR's management are observed for the better quality of life and patient's compliance and treatment pattern is assessed.

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Quality of life is measured (improved or decreased)

RESULTS

Quality of life is a standard of health, comfort, and happiness experienced by an individual or a group. Factor affecting the quality of life include non-compliance, ADR's, lack of nutritious diet and lack of exercises. So monitoring and adverse drug reactions and management will improve the quality of life to some extent. The QOL of patient suffering from COPD is affected and impact is in the worse in the COPD drugs. Hence the prompt treatment of and early diagnosis of COPD will reduces the disease severity and improve the quality of life.

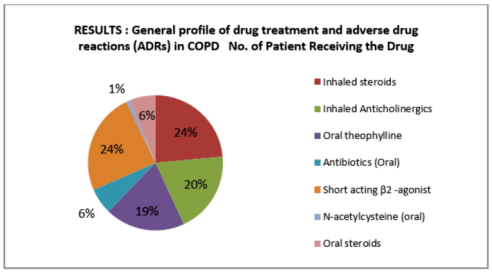

Fig : 1 General profile of drug treatment

General profile of drug treatment and adverse drug reactions (ADRs) in COPD

Table No: 1 Distribution of drugs and their dose

Drug Given	No. of Patient Receiving the Drug	No.of Patient Complaining of Drug	% Incidence
Inhaled steroids	53	30	56
Inhaled Anticholinergics	44	10	22.7
Oral theophylline	43	20	46.5
Antibiotics (Oral)	14	3	21.4
Short acting β2 –agonist	55	3	5
Nacetylcysteine (oral)	2	2	100
Oral steroids	14	3	21.4

Disease specific drug therapy of patients suffering from COPD

Table No: Distribution of drugs suffering with ADR'S

Drugs prescribed	Dose	Number of patients	Total patients
Methylxanthines Etophylline+theophylline (deriphylline)	77mg+23 mg	100	
Anticholinergic+β2 agonist Tiotropium+formoterol	18mg+12 mg	26	
Ipratropium salbutamol	40mg+200 mg	15	41
β2agonist corticosteroids Salmeterol+ fluticasone Formoterol+budesonide	50mg+100 mg 6mg+100 mg	17 12	29
Anticholinergic Tiotropium	18 mg	13	
β2 agonist+anticholinergic+corticosteroids (Tiotropium+formoterol) +budesonide (Salmeterol+ fluticasone) +tiotropium	18mg+12 mg+100 mg 50 mg+100 mg +18 mg	8 9	17

DISCUSSION

Pharmacotherapy in obstructive airway disease usually involves poly pharmacy and the present study showed that most patients with COPD received more than one drug by one or other route of administration. In general, no drug is absolutely safe and an ADR can occur when it is administered alone or in combination. These ADRs could be classified according to their type and/or their severity.

Based on age wise categorization >55 are more out of 4 age group patient of COPD . As per statistical analysis there was no strong clinical Association in the age group(by using the t-test). Our study was supported by . Kramer *et al* have described causality assessment as a "method of eliciting the state of information about a particular drug event connection as input and delivering as output a degree of belief about the truth of the proposition that the drug caused the event to occur" studies.

The incident of the COPD was more common in males (81.48) than females(18.51) as per statistical analysis the t>0.07 (using the test) and there was a significant clinical Association.It was support by Scherer et.al., Studies.

Based on the body weights categorization in the COPD patient 30-40kg is a body with patients for greater in person and then other patient as per statistical analysis t>0.05 (by using t-test) there is a significant clinical association

In our present study patient with more co morbidities where less among them the Anxiety and more than gastrointestinal patients of about as per statistical analysis (by using t-test) there was no significant clinical association.

The patients with family history of COPD (27.7) or comparatively less than the patients without family history of COPD (72.2). As per statically analysis there was no significant clinical association.

In COPD patient among all social habits of alcoholic was more than smoker[6, 7] as per statistical analysis there was a significant clinical association.

Based on consultation period patients were categorized into two batches and follow-up are conducted by the batch A was 3 and from Nov-March 2017 and for batch B was 2 from April-May 2018.

Based on body mass index categorization Davis et.al, was mostly affected in lean of 92.8.

In batch A three follow ups were conducted and patients attended for three follow ups were 67.74%, 87.09%,90.32% respectively for each follow ups counseling conducted for each follow up and adherence were improved from 1to 3(76.1 to 96.4%).

In batch B two follow ups were conducted and patient attended for three follow-ups was 67.74%, 87.09%,90.32% respectively for operation counseling conducted for each follow up and adherences were improved from 1 to 2 (71.4to 88.8).

Among all the drugs of COPD involved in ADR'S Ipratropium salbutamol the most common drug was at least common drug is Tiotropium.

Among all the ADR'S observed in the patient the most common areas was dyspepsia and less for skin hyperpigmentation of face.

The most common type of area based on score was probable,due to the following and patient counseling the quality of life has increased.

CONCLUSION

Chronic obstructive pulmonary disease is a chronic inflammatory disease that is treated life-long as permanent cure is not possible. A number of drugs in combination are used and ADRs are often multiple. Use of oral theophylline needs careful therapeautic monitoring, and dose individualization. More safety studies are necessary. Clinical studies to elicit the toxic dynamics of these ADRs and safety vs risk issues could be beneficial in devising strategies for its rational use in obstructive airway disease.

To conclude, we may say that the overall improvement in total quality-of-life score in patients of COPD was small but may be clinically significant. An advanced age (>60 years), poor socioeconomic status, smoking, and moderate to severe forms of the disease may be responsible for this. It is recommended that besides providing an optimum drug treatment that relieves the current symptoms of the disease, attempts should also be made to enable the patient to remain physically self-dependent. In addition, a psycho-social support will also be required to obtain a significant improvement in quality-of-life.

Our study had some limitations. The numbers of patients enrolled in our study were relatively small (one hundred only). A larger cohort would have given us a better idea of epidemiology of the disease and impact of the drug therapy on quality-of-life. Drug therapy prescribed was usually empirical. Hence, intergroup comparison based on different drug treatments cannot be made either due to smaller sample size or due to similar drugs having been prescribed to the patients of varying disease severity. However, importance of the present study cannot be undermined. It is one of the few studies to be conducted in India on quality-of-life in patients of COPD. It may be the first Indian study which has attempted to study the impact of drug therapy on quality-of-life in these patients. Our study has reported a significant improvement in quality-of-life seen in mild category of patients and very significant correlation between quality of- life and FEV1. This work may prove to be a foundation for future research on quality-of-life in COPD and may also help physicians in deciding.

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