

DRUG UTILIZATION EVALUATION PATTERN OF COPD PATIENTS IN A TERTIARY CARE HOSPITAL - A PROSPECTIVE OBSERVATIONAL STUDY

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ABSTRACT

Introduction: Chronic obstructive pulmonary disease (COPD) is a major public health concern of today. Due to high prevalence, morbidity and mortality of COPD, it is rapidly becoming a significant health issue creating serious challenges in future. Drug utilization evaluation mainly help to understand the drug use pattern, irrational use of drugs, intervention to improve drug use and continuous quality improvement and also it help to provide appropriateness and quality outcome of the therapy in COPD patients. **Aim:** To recognize the drug utilization pattern for the treatment of chronic obstructive pulmonary disease. **Methodology:** A total of 82 patients with COPD who received regular treatment were included in the study. They were recruited from the pulmonology department, Amala institute of medical science,

Trissur. The study has obtained ethical clearance from the hospital ethical committee. **Result:** out of 82 patients 93% were male, 43% patients were smoking and majority of the patients were used combination therapy. most commonly prescribed methylxanthine was Theophylline (67.07%). Hydrocorticosteroids (65.85%) was commonly used corticosteroids. 63.4% of the population were received N-acetylcysteine as a mucolyte. **Conclusion:** In this study all the patients received combination therapy and majority of the patients used inhaled therapy and parenteral corticosteroids.

KEYWORDS: COPD, DUE, Theophylline, Hydrocorticosteroids.

INTRODUCTION

Chronic obstructive pulmonary disease has become a major public health concern of today. Due to the high prevalence, morbidity and mortality of COPD, it is rapidly becoming significant health issue creating powerful challenges in future.^[1] COPD is characterized by airflow obstruction which is not completely reversible. The air flow obstruction remains unchanged for several years but, in the long term it worsens as it progresses. COPD encompasses two serious lung diseases emphysema and chronic bronchitis. Which result in chronic airway inflammation and progressive loss of lung function, making it difficult to breathe normally.^[2] One of the main events in COPD is an exacerbation which is defined as the presence of worsening symptoms along with local and systemic inflammation. COPD is one of the world's most serious health issues. According to WHO, 65 million people have moderate to severe COPD. COPD usually remains under diagnosed and under treated making it fifth causes of morbidity and mortality in developed world.^[3] In 2005, many people died of COPD, which corresponds to 5% of all deaths globally. All the low and middle income countries contribute to the 90% of COPD death.^[4] COPD at one time, was more common in men, but because of increased tobacco use among women in high income countries and the higher risk of exposure to indoor air pollution (such as biomass fuel used for cooking and heating) in low income countries, the disease now affects men and women almost equally.^[5,6] Cigarette smoking, occupational dust and chemicals are some of the common factors leading to COPD. Dyspnoea, chronic cough with or without sputum and poor exercise tolerance are the symptoms are observed.^[6,7] Patient adherence in chronic disease remains a task, resulting in poor health outcomes and increased healthcare expenditures. Non-adherence to COPD treatment can lead to increased frequency of exacerbations, recurrent hospital admissions and mortality rate. Therefore, educating or counselling the patient regarding their condition, pathology, warning signs and symptoms and adherence to medications can help reduce exacerbations and is a key element in the successful COPD treatment.^[7,8] COPD is treated with both pharmacological as well as non pharmacological means. COPD patients tend to have acute exacerbations which are treated with Oxygen, Beta 2 agonist, Anticholinergics, Antibiotics and systemic Steroids. Patients with acute exacerbations are commonly prescribed with antibiotics like Azithromycin due to their underlying infection. Prescribing antibiotics have shown an improved respiratory function within COPD patients^[7,8,9] drug utilization evaluation is mainly used to understand the drug use pattern, use of irrational drugs, intervention to improve drug and continuous quality improvement, taken together treatment of COPD mostly require multiple drug therapy with proper monitoring. Here comes

the importance of DUE for ensuring appropriateness and quality outcome of the therapy in COPD patients.

METHODOLOGY

Study site

Amala institute of medical sciences hospital in Kerala, India.

Study department

Pulmonology.

Study population

82 patients with COPD who receive the regular treatment.

Study period

3 Month

Study Criteria

Inclusion criteria

- Patients of either sex who are aged 18 years and above.
- Patients with diagnosis of chronic obstructive pulmonary disease continued treatment criteria.

Exclusion criteria

- Diagnosis of cystic fibrosis, asthma, or severe bronchiectasis, evidence of pneumonia either at presentation or during follow-up.
- Patients who are in pregnancy stage.

RESULT

Now a day's chronic obstructive pulmonary disease is a major public health concern. Due to high prevalence morbidity and mortality is very high. The COPD subjects were described according to demographic profiles such as age, gender, literacy status, social history, smoking history, socioeconomic status, Total number of medication, prescribed pattern of beta 2 agonist, methylxanthines, mucolytics and antibiotics.

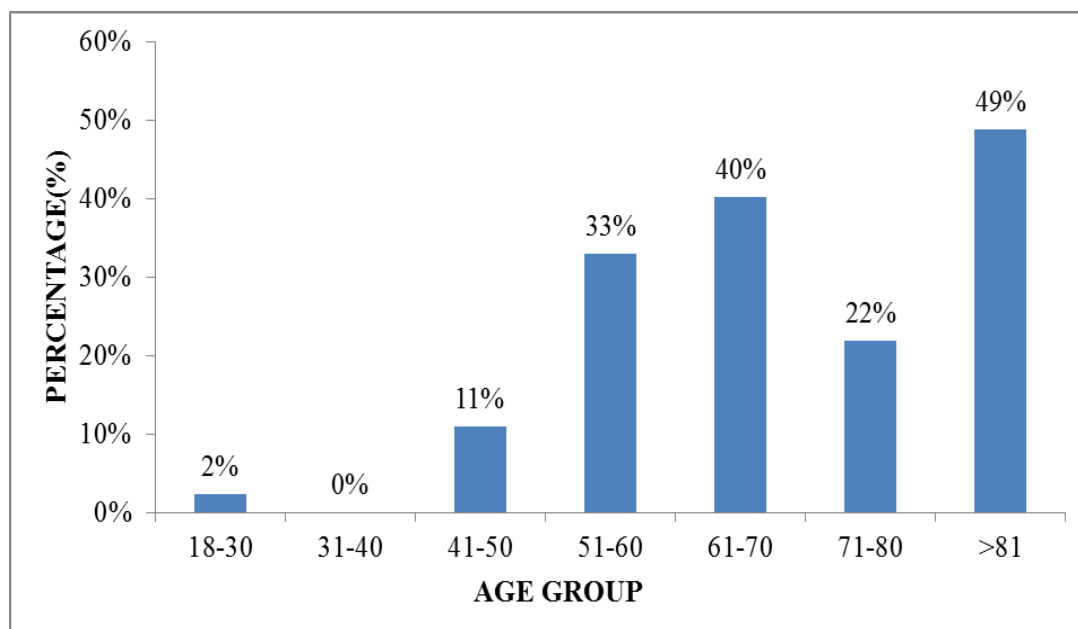


Fig 1: Description of COPD subjects according to age (N=82).

Out of 82 patients enrolled in the study 49% of the population were above the age of 80 years followed by 61 – 70 yrs (40%) followed by 51 – 60 yrs (33%) followed by 71 – 80 yrs (22%) followed by 41 -50 yrs (11%).

Table 1: Gender wise description of COPD subjects (N=82).

Serial No	Gender	Frequency	Percentage(%)
1	Male	77	93.90
2	Female	5	6.09
Total		82	100

Around 93% of the population was male gender which shows the predominance & risk of COPD in male subjects, and only the rest 7% accounts for females.

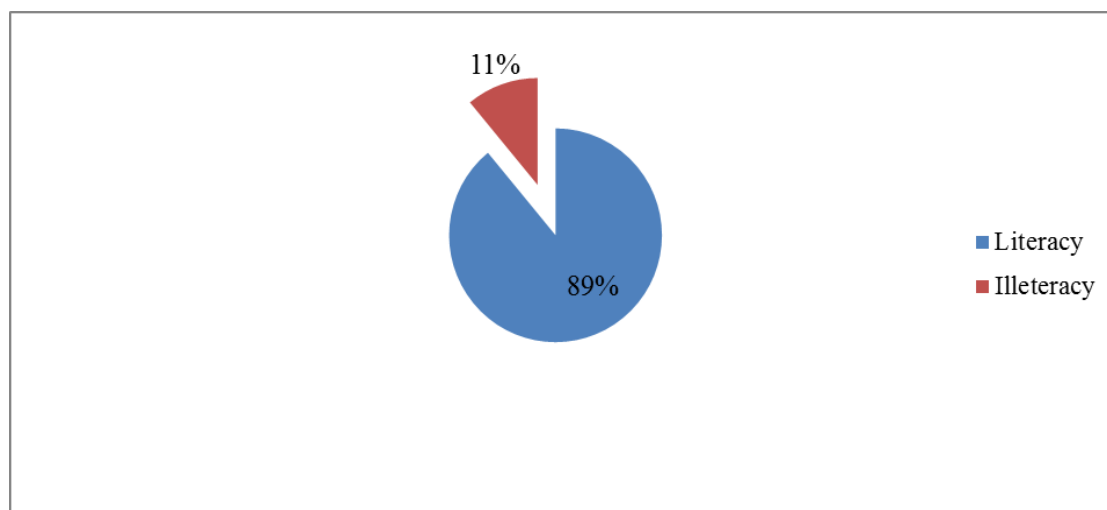


Fig 2: Literacy status(N=82).

Figure 2 shows that 89% of the patients are literate and 11% of illiterate patients.

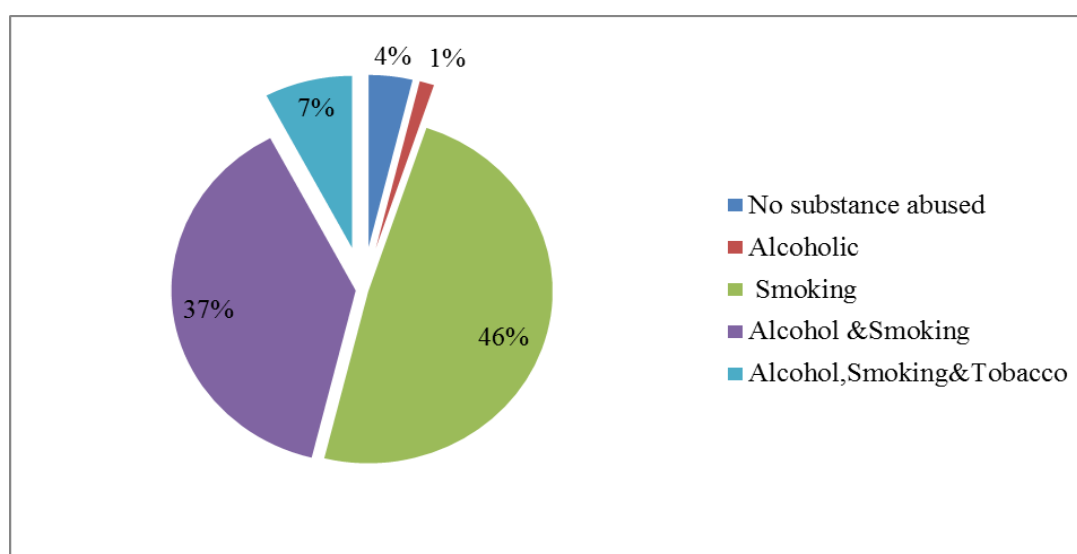


Fig 3: Social history of the COPD persons(N=82).

Figure 3 shows that 46% of the population had smoking history and 37% were both alcoholic and smokers followed by 7% were on alcohol, tobacco and smoking followed by 4% of the population had no substance abuse & 1% of the population sticks to alcohol only.

Table 2: Smoking history of the COPD persons (N=82).

Serial No	Status of Smoking	Frequency	Percentage(%)
1	Current Smokers	44	53.65
2	Reformed Smokers	32	39.02
3	Nil	6	0.07
Total		82	100

Table 2 shows that 53.65% were current smokers & 39% were reformed smokers.

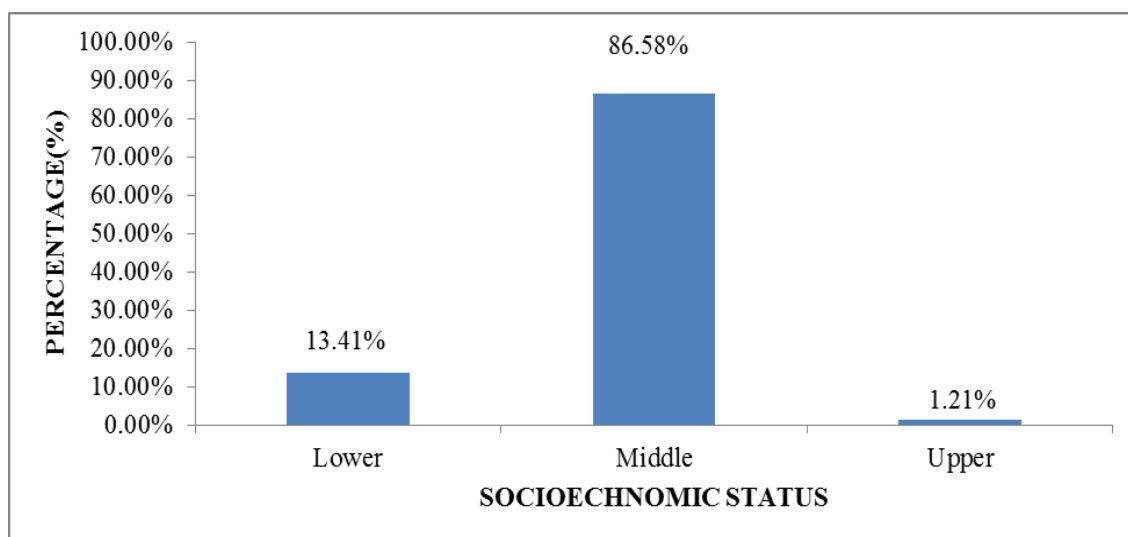


Fig 4: Socioeconomic status of COPD Patients (N=82).

Figure 4 shows that most of the patients in the middle families (86%) followed by lower families (11%), upper families(1.21%).

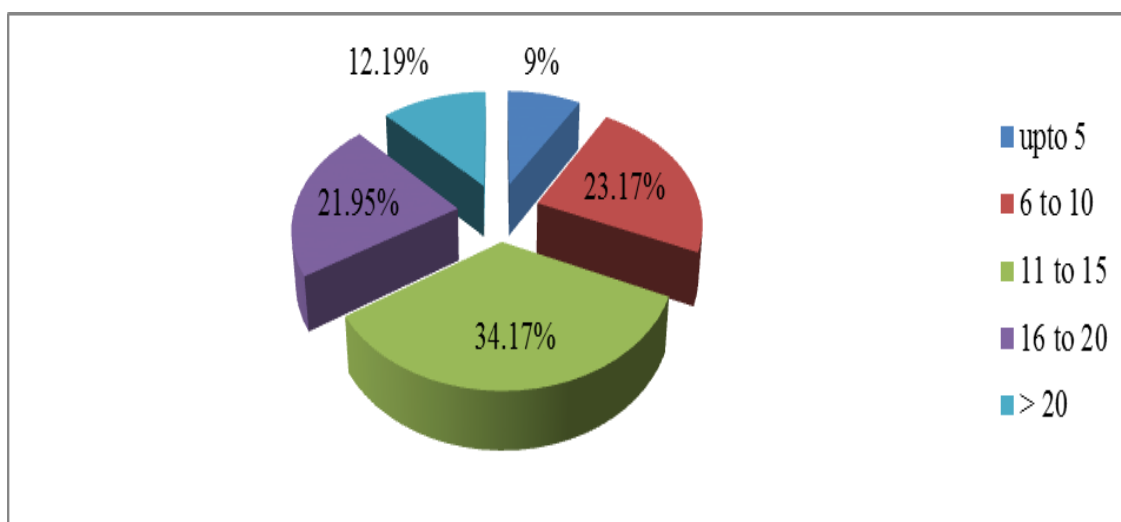


Fig 5: Total number of medication in COPD patients (N=82).

Figure 5 shows that 34.17% of population had 11 – 15 medications followed by 23.17% with 6-10 medications followed by 21.12% with 15 – 20 medications followed by 12.19% with more than 20 medications & 9% of patients with upto 5 medications.

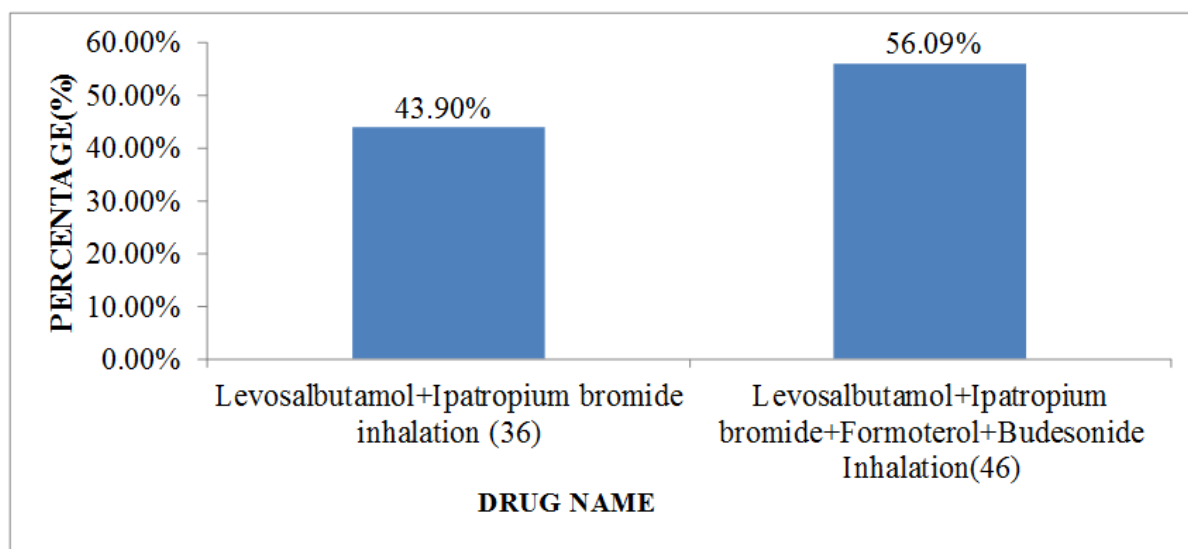


Fig 6: Prescribing pattern of Beta 2 Agonist (N= 82).

Figure 6 shows that majority of the population 56.09% received Levosalbutamol+Ipratropium bromide+Formoterol+Budesonide & the rest of 43.9% received Levosalbutamol +Ipratropium bromide.

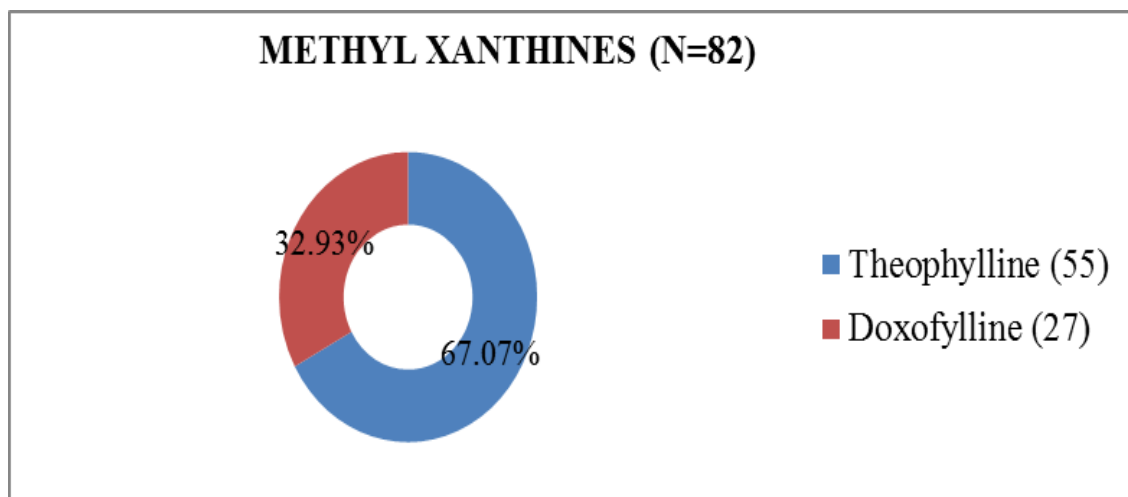


Fig 7: Prescribing pattern of Methyl xanthenes (N=82).

Figure 7 shows that Theophylline was the most commonly prescribed methylxanthine with 67.07% followed by Doxofylline 32.93%.

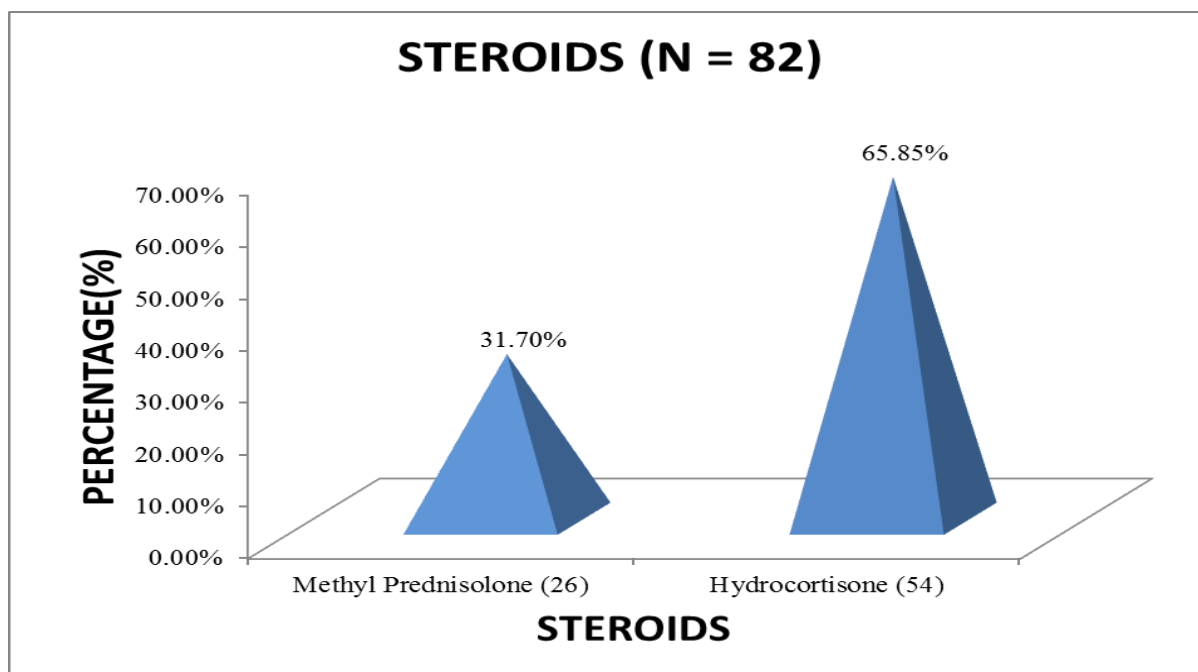


Fig 8: Prescribing pattern of Steroids.

Figure 8 shows that Hydrocortisone was the commonly prescribed steroid with 65.85% and Methylprednisolone with 36.58%.

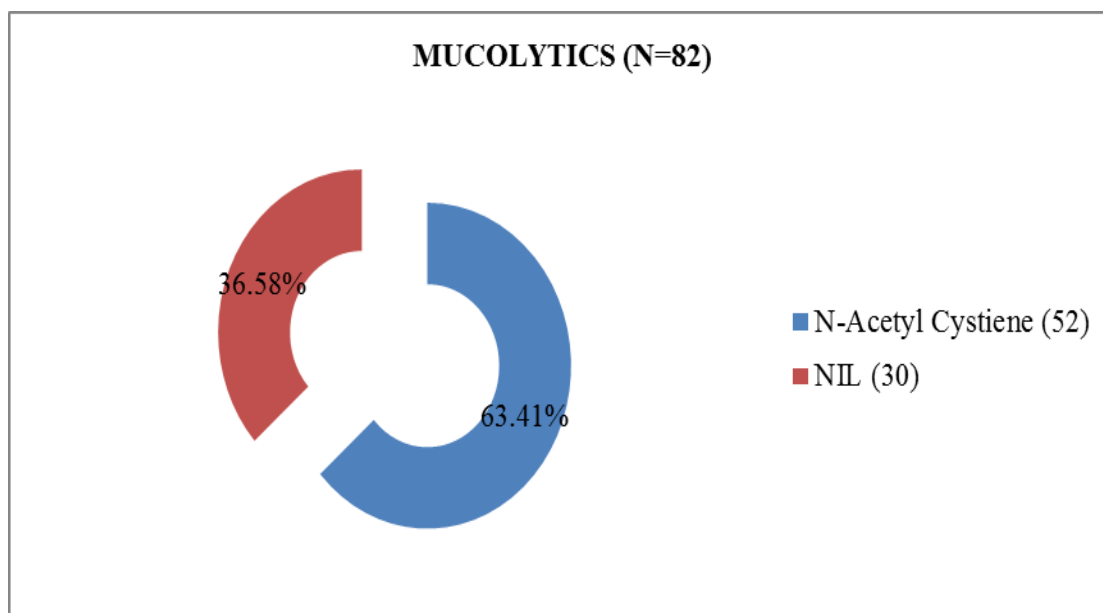


Fig: 9 Prescribing pattern of Mucolytics.

Figure 9 shows that 63.4% of the population received N acetylcysteine as the mucolyte.

Table 3: Prescribing pattern of Antibiotics.

Sl no	Antibiotics (n=82)	Percentage (%)
1	Azithromycin	29.26%
2	Cefaperazone	21.95%
3	Cefipime + tazobactam	19.51%
4	Ciprofloxacin	15.85%
5	Cefuroxime	10.97%
6	Meropenem	0.07%
7	Ceftriaxone	0.06%

Table 3 shows that most of the patients in this study population were on Azithromycin (29.26%) followed by Cefaperazone (21.95%), Cefipime+Tazobactam (19.51%), Ciprofloxacin (15.85%), Cefuroxime(10.97%), Meropenem(0.07%), Ceftriaxone(0.06%).

CONCLUSION

- All the patients in this study received combination therapy.
- Among the inhalational β - agonists, levosalbutamol accounted for 98% use.
- Parenteral steroids were used in 65% of the patients and all of them received hydrocortisone.

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