



Research Article

A RETROSPECTIVE STUDY ON DRUG UTILIZATION REVIEW AND PRESCRIBING PATTERN IN PATIENTS WITH RESPIRATORY DISEASES IN A TERTIARY CARE HOSPITAL, SALEM, INDIA

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ABSTRACT

A retrospective study was conducted on 450 cases, to study the drug utilization review and prescribing pattern in patients with respiratory diseases in a tertiary care hospital. Among 450 cases majority of the cases were COPD (30.9%). Nebulizer was the preferred dosage form for BA (36%), COPD (38%) and Bronchitis (39%), injections for LRTI (30%), syrups for URTI (37%) and capsules for Pharyngitis (62%). 46 prescriptions were found to have drug-drug interactions, Dexamethasone + Theophylline and Dexamethasone+ Budesonide were found to have 28.26% of interactions. B2 adrenergic receptor agonist was most commonly prescribed class of drug for BA (31%), COPD (32%), LRTI (35%), URTI (39%) and Bronchitis (43%) where in the cases of Pharyngitis, Antihistamines (82%). In BA (31%), COPD(67%), LRTI(45%) and Bronchitis(50%), Ceftriaxone was the preferred class of Antibiotics while Amoxicillin for URTI (80%) and Pharyngitis (68%). Out of 1472 prescribed drugs, 904(61%) drugs were prescribed in brand name and 568 (39%) drugs were prescribed in generic name, 61% of drugs were used as monotherapy while 39% of drugs were used as combination therapy. Asthalin (45%) was the most commonly prescribed drug according to Essential Drug List. From the study, it is concluded that the doctors were aware about the use of drugs, safety of prescribing drugs from Essential Drug List (EDL) but there was a lack of knowledge on prescribing with generic names. In the present study most patients were on monotherapy but Patients with respiratory diseases mostly require more than one drug to control the symptoms.

Keywords: Respiratory Diseases, Drug utilization review, Prescribing pattern, EDL.

INTRODUCTION

Drug utilization review (DUR) is defined as an authorized, structured, ongoing review of prescribing, dispensing and use of medication. It involves a comprehensive review of patients' prescription and medication data before, during and after dispensing to ensure appropriate medication decision making and positive patient outcomes. As a quality assurance measure, DUR programs provide corrective action, prescriber feedback and further evaluations. DUR is an ongoing, systematic process designed to maintain the appropriate and effective use of medications¹.

Prescription pattern monitoring studies (PPMS) are drug utilization studies with the main focus on prescribing, dispensing and administering of drugs. They promote appropriate use of monitored drugs and reduction of abuse or misuse of monitored drugs. PPMS also guide and support prescribers, dispensers and the general public on appropriate use of drugs, collaborate and develop working relationship with other key organizations to achieve a rational use of drugs². The aim of PPMS is to facilitate the rational use of drugs in a population³.

A large number of socioeconomic factors affect drug utilization in India. Like; illiteracy, poverty, multiple health care systems, drug advertisement and promotions, sales without prescription, over the counter drugs etc⁴. Understanding the socioeconomic burden on healthcare resources arising from these respiratory

diseases is essential to identify effective interventions, plan priorities, and strategically allocate funds and resources to reduce the burden of these respiratory diseases in India. While several studies have addressed prevalence, diagnosis, and treatment of the above respiratory diseases in India, no studies to date have explored the burden of care in adults who present to healthcare professionals (HCP) using one standard protocol⁵. Respiratory diseases constitute a major cause of morbidity and mortality worldwide, the top five respiratory diseases accounting for 17.4% of all deaths and 13.3% of all disability-adjusted life years in the year 2000⁶.

MATERIALS AND METHODS

A retrospective study was conducted in a tertiary care hospital, Salem, Tamilnadu, to analyze the drug utilization review and prescribing pattern of respiratory patients for a period of six months from November 2017 to April 2018. A total of 450 cases were collected from medical record department, all the relevant and necessary data is collected from patient case sheets. The data collection form include demographic details, past medical and medication history, social habits like smoking and tobacco use, respiratory symptoms, laboratory investigation, co morbidity, commonly prescribing class of drugs in each disease, number of drugs per prescription, dosage form of prescribed drugs cases screened according to type of therapy (mono therapy/ combination therapy), presence/absence of drug interactions.

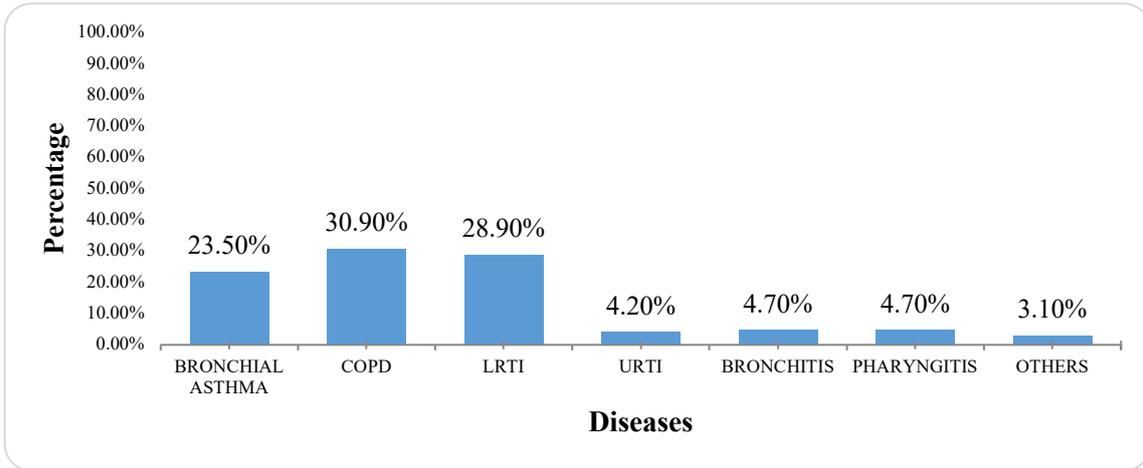


Figure 1: Distribution of number of cases according to diseases

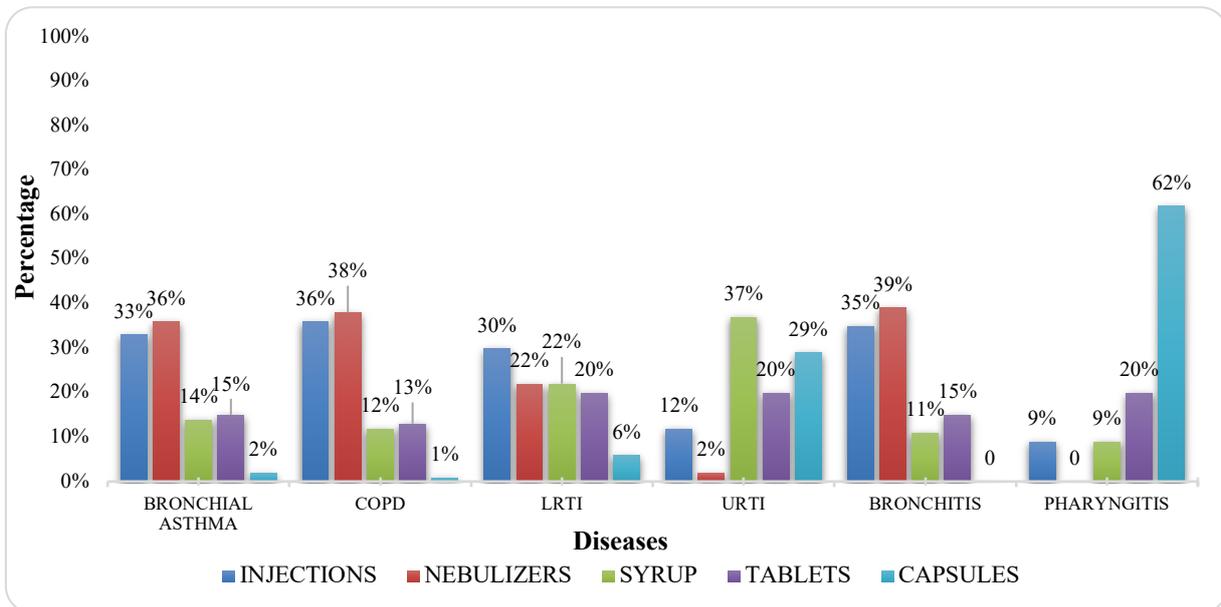


Figure 2: Distribution based on dosage form of prescribed drugs

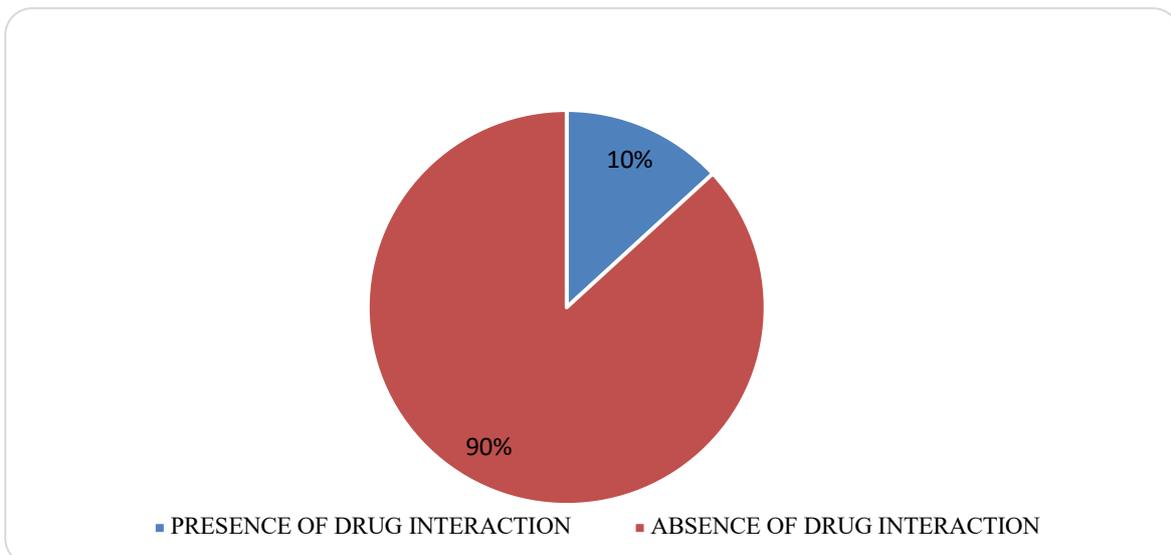


Figure 3: Distribution based on presence and absence of drug-drug interaction

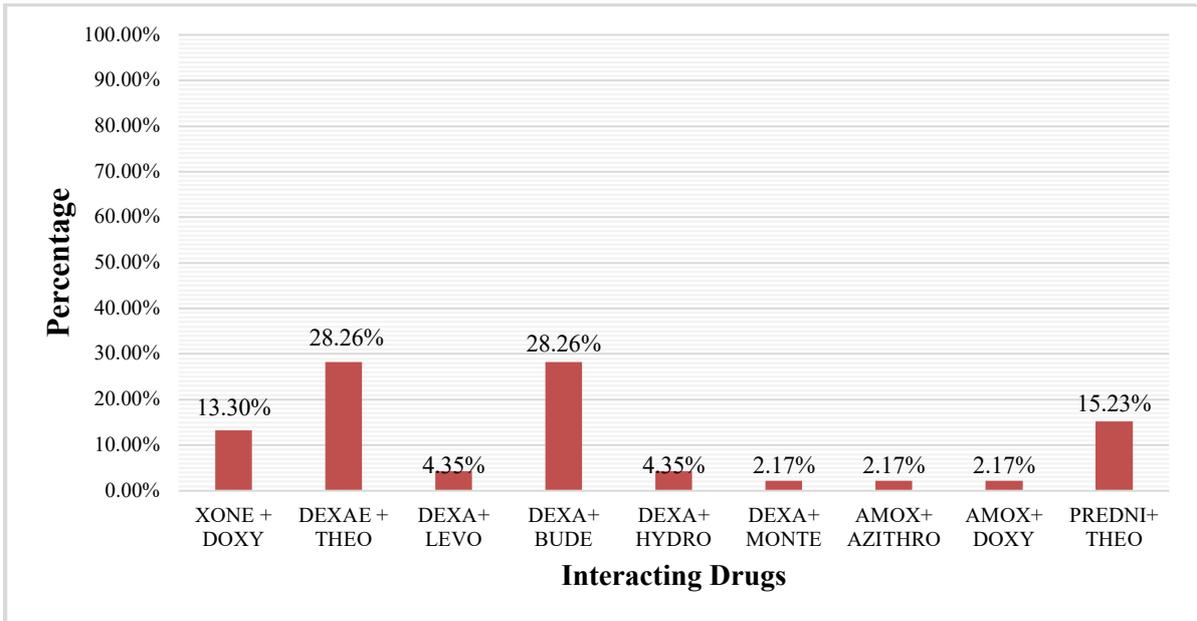


Figure 4: Distribution based on number of drug - drug interactions

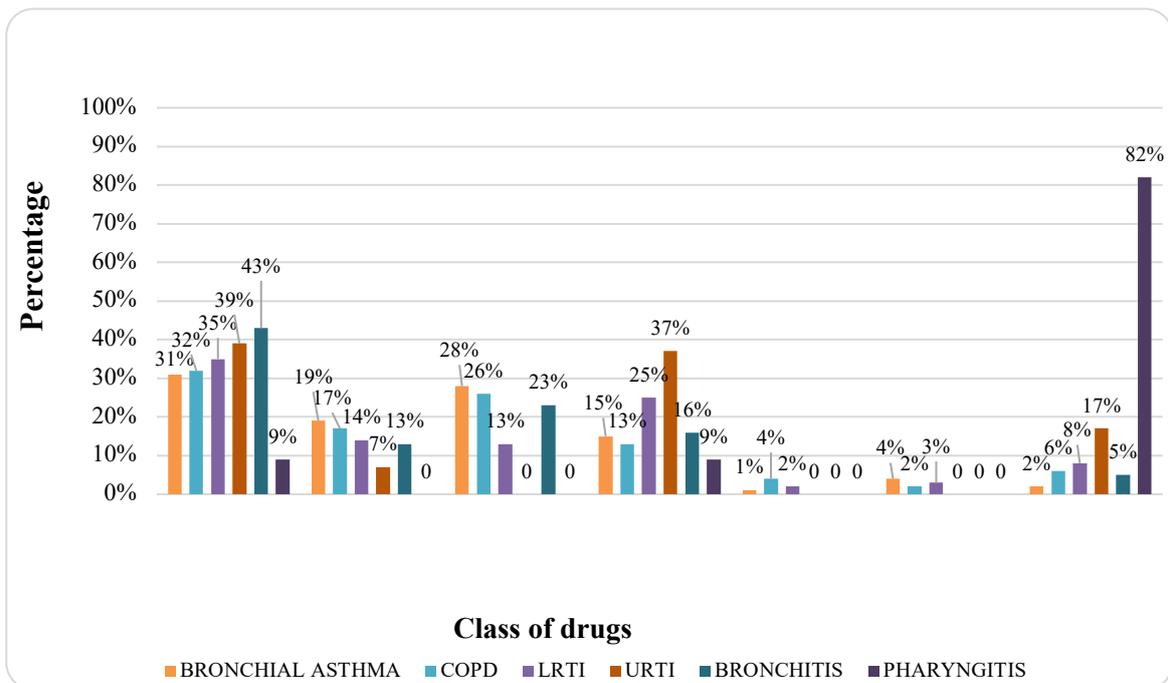


Figure 5: Distribution based on prescribing class of drugs

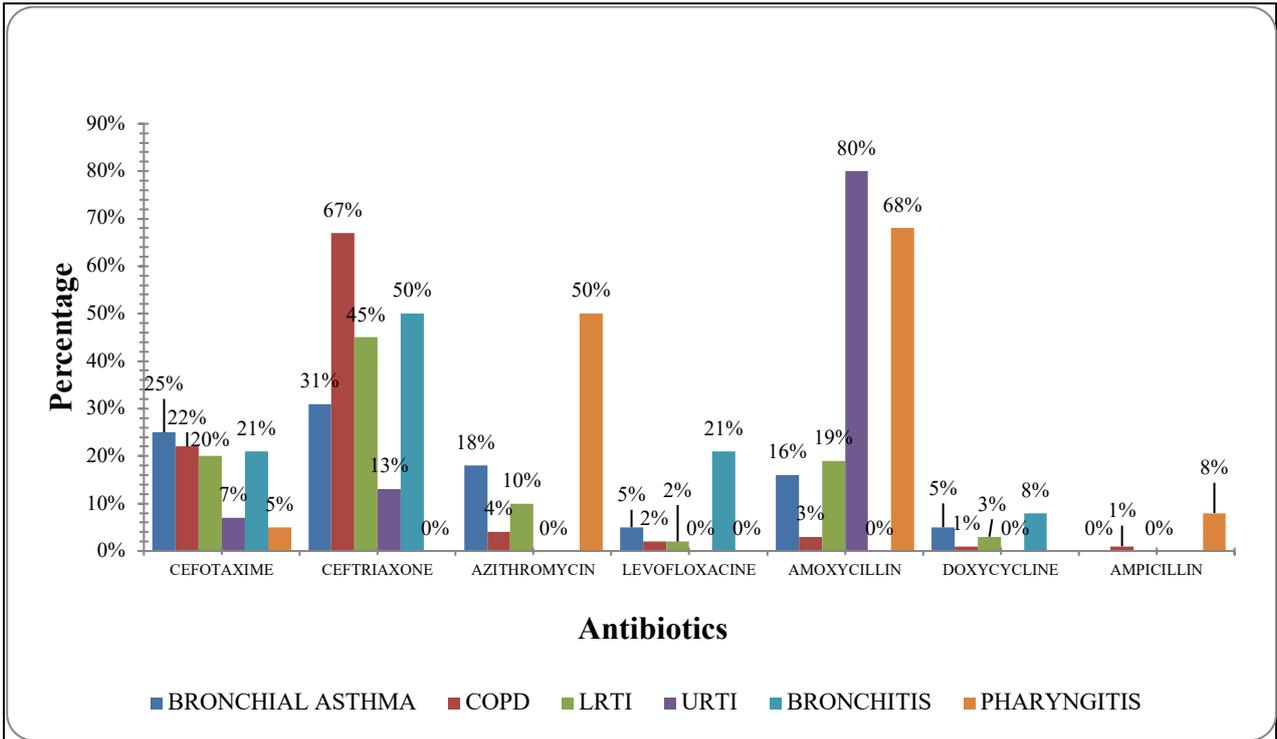


Figure 6: Distribution based on antibiotics prescribed

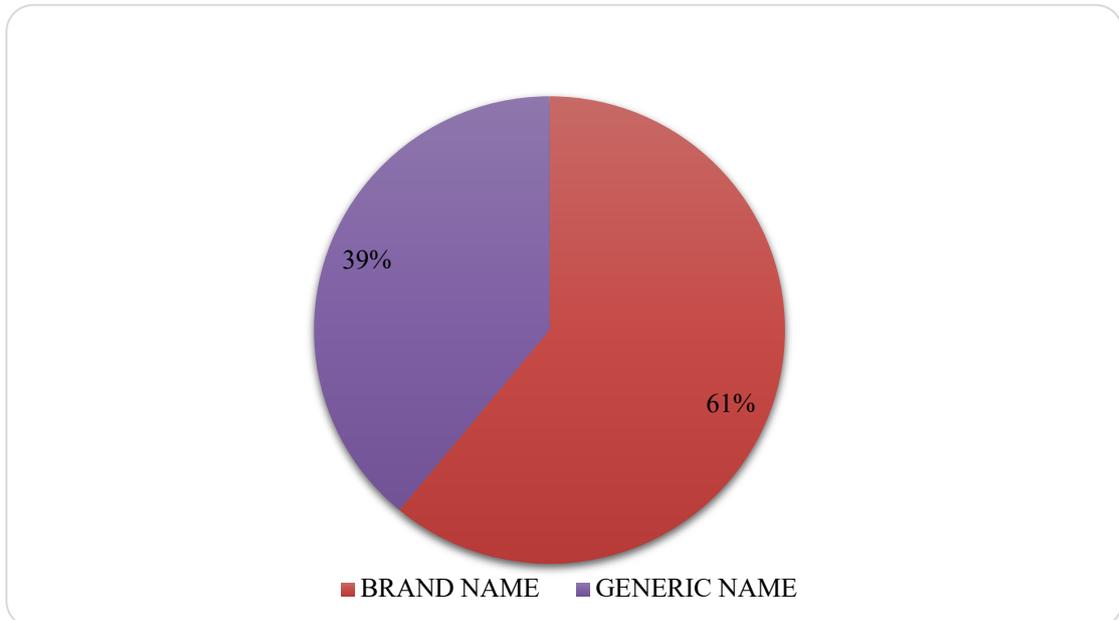


Figure 7: Distribution based on the number of drugs prescribed in brand name & generic name

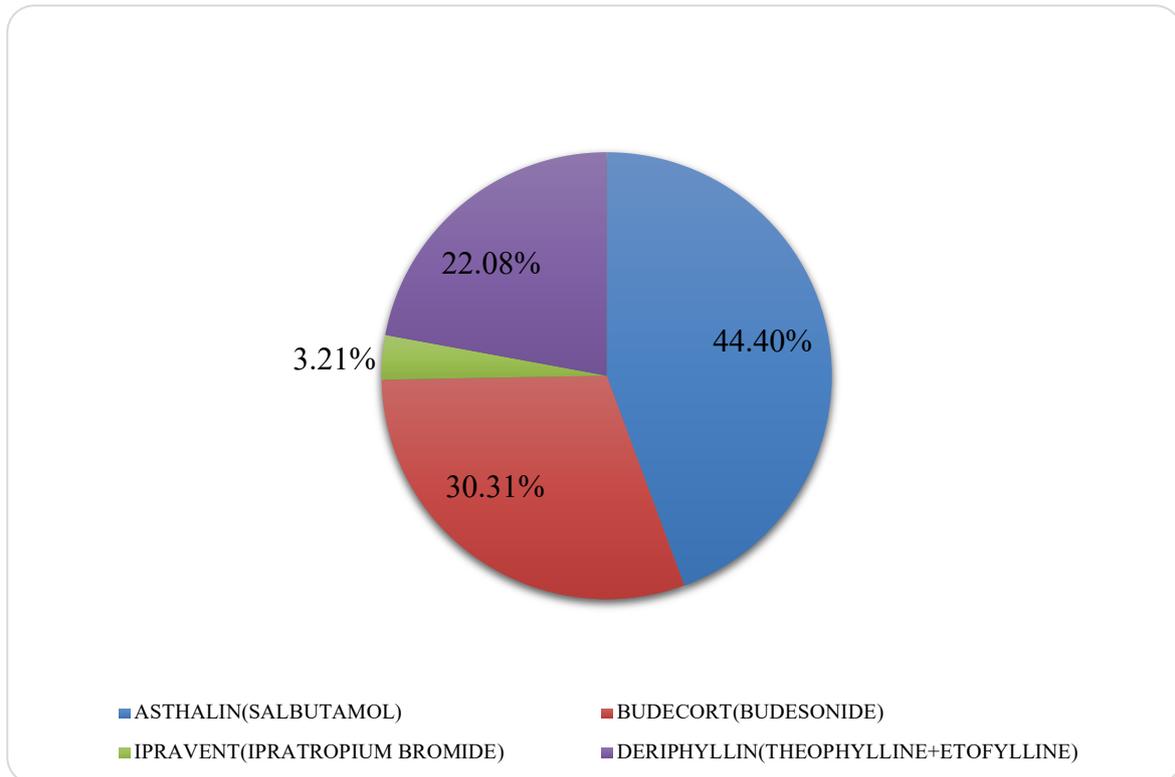


Figure 8: Distribution based on the number of drugs prescribed from essential drug list

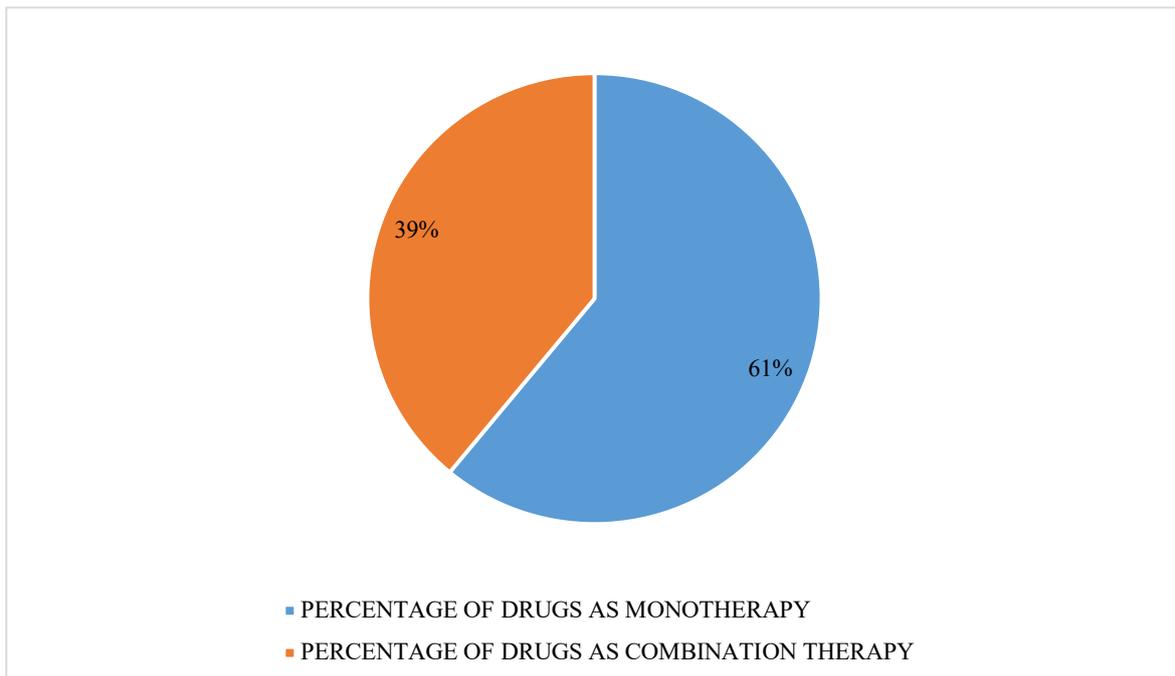


Figure 9: Distribution Based on Type of Therapy

RESULTS AND DISCUSSION

Demographic details

Among 450 cases the most occurring respiratory disease were found to be COPD(30.9%), followed by LRTI(28.9%), Bronchial Asthma (23.5%), Bronchitis (4.7%), Pharyngitis(4.7%), URTI (4.2%) and other diseases (3.1%) (Figure.1). In the age wise distribution the occurrence of Bronchial Asthma, COPD, URTI and Bronchitis were more in the age group of 41-60 and for LRTI,

URT I and Pharyngitis were more in the age group of 61-80. The gender wise distribution BA, URTI and Pharyngitis were more in females with 62%, 53% and 52% while COPD, Bronchitis, LRTI were more in males with 81%, 52% and 52% respectively.

Socio- economical details

According to the distribution based on the tobacco smoking, the respiratory diseases were more in non-smokers, except in COPD, where the disease occurred more in smokers (55%) than non-smokers (45%) and the occurrence of respiratory diseases were

more in non-alcoholic patients. As per the socioeconomic status, most of the patients were in grade III category (86.67%).

Drug utilization review

According to distribution based on dosage form of prescribed drugs, nebulizer was the preferred dosage form for BA (36%), COPD (38%) and Bronchitis (39%), injections for LRTI (30%), syrups for URTI (37%) and capsules for Pharyngitis (62%) (Figure: 2). Among the patients with bronchial asthma, COPD, LRTI and Pharyngitis, Hypertension was the most common co morbid condition while in the cases of URTI, the most common co morbid condition was found to be DM (31%). In the cases of bronchitis, there was an equal distribution of co-morbid conditions (25%). Among the 450 prescriptions, 10% of prescriptions were found to be having drug interactions, which were of 9 different types of interactions and in 90% of prescriptions were not found drug interactions. 46 prescriptions were found to have drug-drug interactions (Figure: 3). Among the 46 prescriptions the drugs Dexamethasone + Theophylline and Dexamethasone+ Budesonide were found to have 28.26% of interactions (Figure: 4).

Prescription analysis

Based on distribution on prescribing class of drugs for respiratory diseases, B2 adrenergic receptor agonist was most commonly prescribed class of drug for BA (31%), COPD (32%), LRTI (35%), URTI (39%) and Bronchitis (43%). Where in the cases of Pharyngitis, Antihistamines (82%) was the most preferred class of drug (Figure: 5). According to distribution based on prescribed Antibiotics, in BA, COPD, LRTI and Bronchitis, Ceftriaxone was the preferred class of Antibiotics with 31%, 67%, 45% and 50% respectively. Amoxycillin is the preferred class of Antibiotic for URTI (80%) and Pharyngitis (68%) (Figure: 6). Out of 450 prescriptions, 303 prescriptions had 5-10 drugs. Out of 1472 prescribed drugs, 904(61%) drugs were prescribed in brand name and 568 (39%) drugs were prescribed in generic name (Figure: 7). According to distribution based on the number of drugs prescribed from Essential Drug List, Asthalin (45%) was the most commonly prescribed drug, 30% was Budecort, 22% was Deriphyllin and 3% was Ipravent (Figure: 8). Majority of the patients with respiratory diseases had 1-4 days of hospital stay when compared to 5-8 days of hospital stay, 9-12 days of hospital stay, 13-16 days of hospital stay and above 16 days of hospital stay. Out of 1472 drugs prescribed, 61% of drugs were used as monotherapy while 39% of drugs were used as combination therapy (Figure: 9).

CONCLUSION

From the above study, it was concluded that the prescribing patterns were in accordance with WHO guidelines. Hence, the doctors were aware about the use of drugs, safety of prescribing drugs from EDL but there was a lack of knowledge on prescribing with generic names. Most of the drugs were prescribed by brand name. Prescribing by generic name helps the hospital pharmacy to have better inventory control. These will also aid the pharmacy to purchase the drugs on contract basis, as the number of brand is less, reduce the confusion among the pharmacists while dispensing. Generic drugs are often more economic than the branded ones. Prescribing by brand name may be an evidence of vigorous promotional strategies by pharmaceutical companies.

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