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ORIGINAL ARTICLE

A retrospective study on drug utilization in patients with acute exacerbation of bronchial asthma in adults at a tertiary teaching hospital in Bengaluru

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KEYWORDS

Bronchial asthma;
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Abstract *Background:* Drug utilization plays a role in helping the health care system to understand, interpret and improve the drug use and continuous quality improvement. It plays an essential part of pharmaco-epidemiological studies. The purpose of this study was to evaluate the drug utilization trends in patients with acute exacerbation of bronchial asthma in a tertiary teaching hospital in Bengaluru.

Materials and methods: 100 prescriptions from patients with established diagnosis of acute exacerbation of bronchial asthma were assessed from the Department of Pulmonary Medicine and the data gathered was analysed using MS Excel.

Results: Majority of the prescriptions irrespective of severity received inhalation β2 agonist (formoterol) as a bronchodilator. Nebulization route was given for managing the acute exacerbations followed by inhalation route. Hydrocortisone was prescribed to all patients for managing acute exacerbations. Montelukast was used an adjuvant therapy. Most of them were prescribed combination therapy. Doxophylline was prescribed among all the methylxanthines.

Introduction

Drug utilization research is defined by WHO as "marketing, distribution, prescription and use of drugs in a society, with special emphasis on the resulting medical, social and economic consequences". Drug utilization evaluation (DUE) or drug utilization review (DUR) is an essential part of pharmaco-epidemiological studies which provide a proper understanding usage pattern of drugs, quality and efficiency use of drugs and its outcomes. DUR can play a key role in helping the health-care system to understand, interpret and improve the prescribing administration and to maintain the rational use of drugs which assist the physician's prescribing attitude in accordance with the predetermined standards by allocating them with the feed-back and also in designing, conducting and imparting educational programmes for healthcare providers [1,2].

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Table 1 Demographic data.

Age (in years)	Male	Female	Total (n = 100)
10–19	3	3	6
20–29	27	14	41
30–39	9	7	16
40–49	14	10	24
50–59	4	3	7
60–69	2	2	4
70–80	1	1	2

Asthma is a chronic inflammatory disorder of the airways characterized by bronchial hyper-responsiveness and airflow limitation that may vary in severity and frequency from person to person. The symptoms of asthma include recurrent episodes of wheezing, breathlessness, chest tightness and cough [3]. The characteristic pathophysiological changes in asthma involve several inflammatory cells and mediators that contribute to symptoms. In India, asthma is known to be one of the major causes of morbidity and mortality, comprising about 3–11% of adults and 3–5% of paediatric population [4]. The target of asthma treatment is to achieve and maintain clinical control.

According to GINA (Global Initiative for Asthma) guidelines, various drugs are suggested for the management of asthma that includes long and short acting β2 agonists (salbutamol, salmeterol, formoterol), corticosteroids (fluticasone, prednisolone, budesonide), xanthine derivatives (theophylline) and leukotriene receptor antagonists (Montelukast). These drugs can be used alone or in conjunction with other antiasthmatic drugs [5].The present study was done to describe trends in the consumption of drugs for managing acute exacerbation of bronchial asthma in adult population in a health-care system.

Aim and objective

The aim was to evaluate drug utilization pattern in acute exacerbation of bronchial asthma among adult population at a teaching tertiary-care hospital in Bengaluru.

Materials and methods

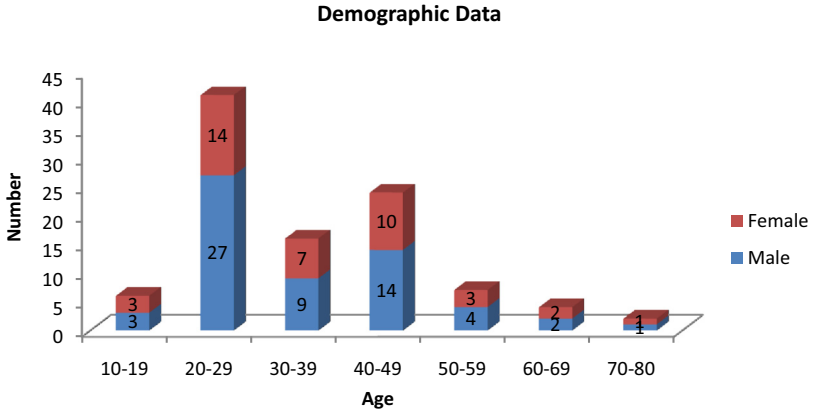
A retrospective cross-sectional study analysing about 100 prescriptions was carried out after taking approval from Institutional Ethics Committee. Patients were selected on the basis of inclusion and exclusion criteria. Patients of age more than 18 years diagnosed with acute exacerbation of bronchial asthma were included and who were having other respiratory problems like COPD, cardiac problems were excluded from this study.

Table 2 Asthmatic medications.

Category	Drugs
β agonists	Salbutamol, formoterol
Corticosteroids	Hydrocortisone, budesonide, methyl prednisolone
Methylxanthines	Etophylline, theophylline, doxophylline
Anticholinergics	Ipratropium bromide
Leukotriene modifiers	Montelukast
Anti histamines	Levocetirizine, fexofenadine

Table 3 Prescribed asthmatic medications.

Drugs	Number of prescriptions N = 100
Salbutamol	7
Salbutamol + ipratropium bromide	87
Formoterol + budesonide	26
Etophylline + theophylline	34
Doxophylline	53
Budesonide	53
Hydrocortisone	61
Methyl prednisolone	7
Dexamethasone	1
Montelukast	57
Fexofenadine	2
Levocetirizine	3



Graph 1 Graphical presentation of demographic data of population under study.