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EVALUATION OF POTENTIAL DRUG-DRUG INTERACTIONS IN ASTHMA PATIENTS RECEIVING POLYPHARMACY: A PHARMACOVIGILANCE STUDY AT A TERTIARY CARE HOSPITAL

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ABSTRACT
Biomedical signal processing is a key area within biomedical engineering that is interested in physiological signals acquired from patients. When these signals analyzed and processed can help medical teams to make their optimal decisions. Physiological signals such as electrocardiogram (ECG), electroencephalogram (EEG), electromyogram (EMG) involve valuable data that contribute solving the issues of patients. These physiological signals suffer from noise and artifacts, and require amplification, extraction and processing. This paper provides a comprehensive review about physiological signals their meanings, importance, applications in the healthcare field, and challenges face signal processing. Also, it includes highlights about signal acquisition and some pre-processing approaches required to obtain the useful information from signals.

KEYWORDS: Biomedical Signal Processing, ECG, EEG, EMG.

KEYWORDS: Asthma, Polypharmacy, Drug–Drug Interactions, Pharmacovigilance, pDDIs.

INTRODUCTION

Asthma is a heterogeneous chronic respiratory disease characterized by airway inflammation, hyperresponsiveness, and variable expiratory airflow limitation. Its management is inherently complex, necessitating long-term adherence to multiple pharmacologic agents to achieve symptom control and prevent exacerbations.

AIM AND OBJECTIVES

Aim

To evaluate the severity and frequency of potential drug–drug interactions in asthma patients receiving polypharmacy.

Objectives

- To assess polypharmacy prescriptions among asthma patients
- To identify potential drug–drug interactions
- To classify interactions based on severity (Major, Moderate, Minor)

MATERIALS AND METHODS

Study Design: Cross-sectional study
Study Duration: 6 months
Study Site: Tertiary care hospital
Sample Size: 133 patients

RESULTS

Out of 133 prescriptions, 125 (93.98%) showed potential drug–drug interactions. The majority of interactions were moderate (42.77%) and mild (43.93%), while major interactions accounted for 13.30%. The highest frequency of pDDIs was observed in the age group of

50–59 and 70–79 years. Females constituted the majority of the study population.

DISCUSSION

The study demonstrated a high prevalence of potential drug–drug interactions among asthma patients receiving polypharmacy.

CONCLUSION

Potential drug–drug interactions are highly prevalent among asthma patients receiving polypharmacy. Regular medication review and careful monitoring are essential to minimize associated risks and improve patient safety.

Ethical Approval

Approved by the Institutional Research Committee (IRC) and Institutional Ethics Committee (IEC) of Government Medical College, Kozhikode.

Conflict of Interest

Nil.

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