WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Profile of Analysis of Adverse Drug Reactions of Few Drugs in a Teaching Hospital

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ABSTRACT

Background: Adverse drug responses are observably harmful or unpleasant side effects that arise from medical product use-related interventions. These reactions indicate potential risks associated with continued use of the product and call for its withdrawal, modification of the dose schedule, prevention, or special treatment. The current study set out to identify popular medications, their intensity and associated symptoms, and to examine the trends in adverse drug reactions that occurred in our facility.

Methods: Over the course of six months, an observational research was carried out at a hospital. The inpatient wards and outpatient department have received reports of at least one adverse medication response. I personally gathered missing data and additional information by using case papers or by speaking with the doctor.

Results: In the middle of 2024, a total of 25 adverse medication reactions involving patients of all ages were reported. Sixty percent of the ADRs happened to those over the age of thirty. The majority of medications that cause adverse drug reactions (ADRs) are antibiotics. The most prevalent ADRs were rashes and urticarial (37%), which were followed by chills, nausea, vomiting, indigestion, rash on skin, itching and burning feeling throughout the body, and rash on skin. ADRs were more common when many medicines were used than when one drug was used.

Conclusion: Antibiotics are the most prevalent treatment that causes dermatological adverse drug reactions (ADRs), which occur most frequently in our hospital. To improve medication safety, more people need to be aware of and knowledgeable about the ADRs reporting system.

Key words: Drug Safety, Pharmacovigilance, Teaching Hospital, Drug Monitoring, Patient Safety

Introduction:

Adverse drug responses are observably harmful or unpleasant side effects that arise from medical product use-related interventions. These reactions indicate potential risks associated with continued use of the product and call for its withdrawal, modification of the dose schedule, prevention, or special treatment. The current study set out to identify popular medications, their intensity and associated symptoms, and to examine the trends in adverse drug reactions that occurred in our facility. Rashes, stomach pain, indigestation, a drop in white blood cell count, kidney damage, and nerve damage that might result in hearing or vision impairments are just a few examples of adverse drug responses.

Drug interactions, synergy, duplication, additive effects, stopping therapy, adjusting dosage to save money, omitting some drugs, and physiological antagonists can all result in adverse drug reactions (ADRs).The suspected substance must be withheld or withdrawn as the initial step in treatment. Individual decisions should be made about any additional therapy. When an ADR is detected, always let the patient know so they can take preventative measures going forward.

Material and methods:

An observational research lasting six months was carried out at a tertiary care institution. The inpatient wards and outpatient department have received reports of at least one adverse medication response.From the time of their hospital release until the end of the research period, they were closely watched for any ADR occurrences. The research ran from November 1, 2024, to April 30, 2024, for a total of six months.

The pharmacy department offered basic awareness lectures prior to the commencement of the course. They were made aware of the mechanism for reporting spontaneous adverse drug reactions (ADRs) and the value of pharmacovigilance in encouraging voluntary reporting of adverse drug responses.

The research comprised all patients, regardless of gender or age group. Regularly asking the carer and medical staff about ADR occurrences served as the basis for adverse effect monitoring, which also included laboratory testing when clinically necessary.Complete histograms, peripheral smears, electrolytes, and testing for liver and kidney functions were among the laboratory indications. The pharmacovigilance centre arranges pharmacovigilance awareness programmes for the medical staff of the institution, which includes doctors, nurses, medical students, and chemists, in light of the underreporting of adverse drug reactions. The reports that were gathered were recorded and examined for demographics, severity, causation, and preventability. The intensity of the ADR is summed up and classified as mild, moderate, or severe. Using this preventability scale, the ADRs are categorised as definitely avoidable, potentially preventable, and not preventable.

Results

A total of 25 patients with ADRs were monitored from November to April 2024 at the conclusion of the trial period. It was shown that 37% of patients with adverse medication responses were men and 63% of patients were women.

Based on age, the patients were divided into four groups. In the current study, 64 percent of the patients fell between the ages of 21 and 40. The patients in the age ranges of 41–60 years, 0–2 years, and above 60 years made up 16%, 12%, and 8% of the total.

Antibiotics were the most often implicated medication class in adverse drug reactions (67%). In order of relevance, the antibiotics ceftriaxone, cefixime, ciprofloxacin, cefotaxime, norfloxacin, and gentamycin are linked to ADRs. Common adverse effects include nausea, vomiting, drowsiness, and stomach discomfort. Few people have many symptoms at once, such as indigestion, rash, stomach discomfort, and vomiting.

The questionable adverse drug reactions linked to certain medications shown in the table. A

Drugs linked to and suspected of causing adverse drug reactions

S. No.	Drug Implicated	Drug Reactions	No. of Patients	% of Patients
1.	Ceftriaxone	Nausea, change in taste, headache	5	20
2.	Ciprofloxacin	Itching and burning sensation all over body, Rash on skin	2	8
3.	Cefixime	Abdominal pain	2	8
4.	Cefotaxime	Rash on skin	2	8
5.	Norfloxacin	Diarrhoea, Nausea	1	4
6.	Gentamycin	Vertigo	1	4
7.	Diclofenic	Stevenson Johnson syndrome	2	8
8.	Isoniazi+Rifampicin+ Pyrazinamide	Hepatotoxicity	1	4
9.	Rifampicin	Flu like symptoms	1	4
10.	Clonazipam	Rash on skin	1	4
11.	Disodium hydrogen citrate	Indigestion, Vomiting	4	16
12.	Pantoprazole	Diarrhoea, Stomach cramps	2	8
13.	Nicardipine	Muscle cramps	1	4

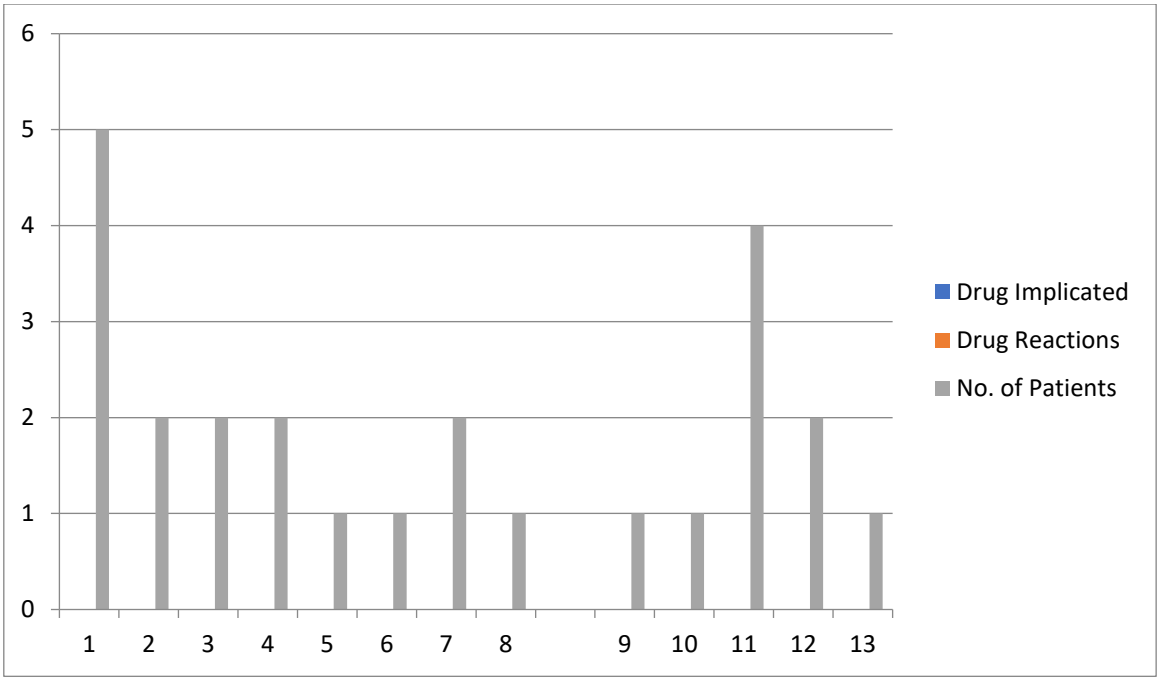
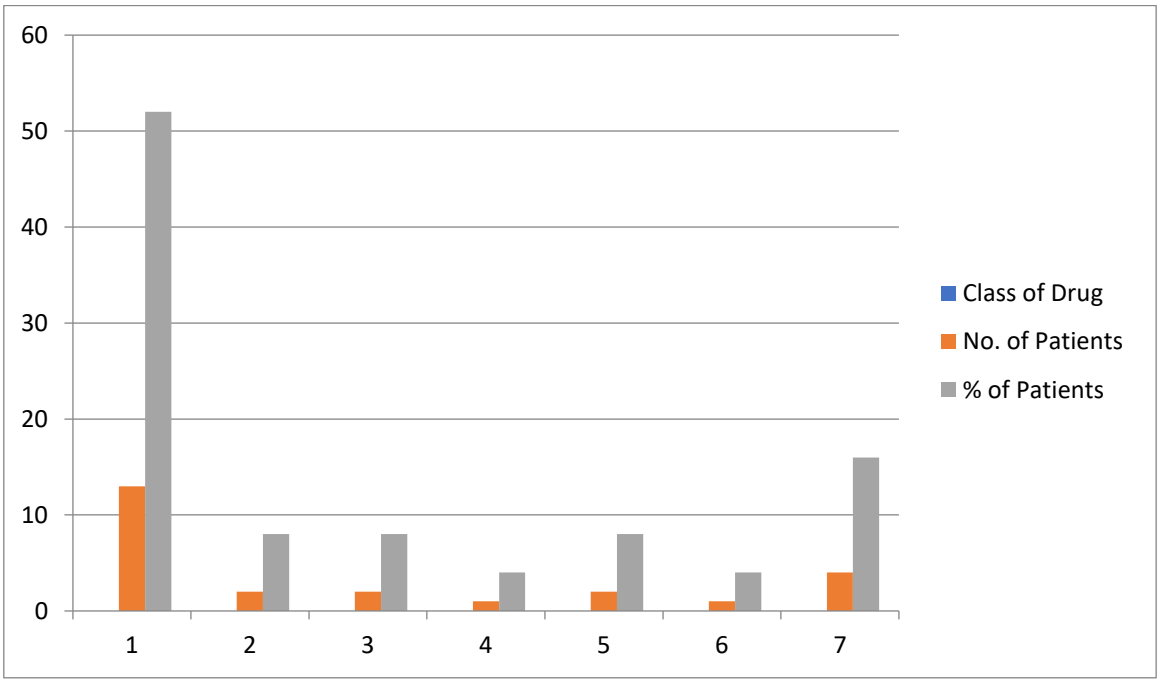


Table B lists the medication classes that may be connected to the suspected ADRs.

Drug class that may be connected to the potential ADRs

S. No.	Class of Drug	No. of Patients	% of Patients
1.	Antibiotics	13	52
2.	Antitubercular	2	8
3.	NSAIDS	2	8
4.	Sedative Hypnotics	1	4
5.	Gastrointestinal Drugs-Proton Pump Inhibitor	2	8
6.	Antihypertensive Drugs-Calcium Channel Blocker	1	4
7.	Urine Alkaliser	4	16



Discussion :

ADRs in a distinct patient age group represent a significant health issue. Despite initiatives to lower the frequency of adverse events associated with drugs that result from drug-induced responses.

The Index Medical College and Research Centre in Indore is where the studies were conducted. After a six-month research, 25 ADRs were discovered in individuals of all ages. For logistical considerations, we were unable to get data on the overall number of patients in our trial. This is something we view as a research restriction.

For a population, the identification, assessment, and monitoring of ADRs should be reinforced. Pharmacovigilance has a function in monitoring patient medication safety and should be assessed for the identification of emerging and uncommon adverse drug reactions. In order to avoid ADRs, sufficient consideration should be given to the general public's and health care providers' understanding of spontaneous reporting of ADRs.

Conclusions :

The majority of medications that cause adverse drug reactions (ADRs) are antibiotics. This suggests that in order to guarantee the safety of medication therapy, patients of various age groups should be subject to strict ADR monitoring. There should be a variety of pharmacovigilance awareness campaigns to boost unprompted ADR reporting.

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