

Available online on 15.04.2021 at <http://jddtonline.info>

Journal of Drug Delivery and Therapeutics

Open Access to Pharmaceutical and Medical Research

© 2011-21, publisher and licensee JDDT, This is an Open Access article which permits unrestricted non-commercial use(CC BY-NC), provided the original work is properly cited



Open Access Full Text Article



Research Paper

Evaluation of Drug Prescription Pattern using World Health Organisation Prescribing Indicators in a Tertiary Care Hospital, Bangalore

*Gaddam Mrudula Stuthy, Dhanush Salin, Ritty Sara Cherian

Department of Pharmacy Practice, Aditya Bangalore Institute of Pharmacy Education and Research Bangalore-560064, Karnataka, India

Article Info:



Article History:

Received 11 Feb 2021
 Review Completed 18 March 2021
 Accepted 26 March 2021
 Available online 15 April 2021

Cite this article as:

Stuthy GM, Salin D, Cherian RS, Evaluation of Drug Prescription Pattern using World Health Organisation Prescribing Indicators in a Tertiary Care Hospital, Bangalore, Journal of Drug Delivery and Therapeutics. 2021; 11(2-s):41-43
 DOI: <http://dx.doi.org/10.22270/jddt.v11i2-s.4788>

*Address for Correspondence:

Ms. Mrudula Stuthy, Department of Pharmacy Practice, Aditya Bangalore Institute of Pharmacy Education and Research Bangalore-560064, Karnataka, India

Abstract

Aim of the study: To monitor the drug use patterns by using WHO prescribing indicators in a tertiary care hospital and to minimise the irrational prescribing practices by the prescribers.

To monitor the drug use patterns by using WHO prescribing indicators in a tertiary care hospital and to minimise the irrational prescribing practices by the prescribers.

Materials and Methods: This is a prospective observational study, the patients who were satisfying the inclusion criteria will be enrolled into the study. The patient's data were collected in specially designed documentation form. The collected data's were assessed using descriptive statistics.

Results: The study was conducted in 143 patients in which the average number of drugs per encounters was 3.5 and the percentage of drugs in the generic name was 37.10% (n=190), and in brand names were 62.89% (n=322). The number of encounters with antibiotics was 61.5% and where as 57.35% of the total drugs prescribed was injections. Most of the medicines prescribed were included in the list of essential medicines of India that is 96.09% and without use of antibiotics 38.46% (n=55).

Conclusion: Poly pharmacy leads to drug chances of interactions and risk of ADRs and revealed that most of the patients were prescribed with the poly pharmacy and in brand names. The use of antibiotics was much more in the study, which should be minimize so that antimicrobial resistance can be minimized.

Keywords: adverse drug reaction, essential drug list, prescribing indicators

INTRODUCTION:

Medicine is an ever transitional science, which deals with the practice of diagnosis use, treat or prevention of diseases, better health care incorporates availability of good quality products at minimum cost with maximum effectiveness in minimise risk with respect to the patient's choices². Inappropriate use of medicine leads to serious morbidity and mortality, it also exemplifies a waste of resources and may harm the public health by resistance in case of antimicrobials³.

WHO says drugs promotion as all the informational and eloquent activities by manufacturers, distribution to influence sale and practice of medicinal drugs⁵. It is mentioned that most of the brochures or advertisements were not adhering with standards criteria of ethics and this would end up in irrational use of drugs and affect patient's health status negatively⁶.

The indicators of drug use are first line measures. The drugs use studies by indicators are broadly categorised into four

i.e. describing current treatment practices, comparison of the individual facility performance or prescriber's performance, monitoring of drug use patterns in a periodic manner, assessing the impact of intervention⁷.

These facts indicate that there is a need to assess evaluation of drug prescription pattern using world health organisation prescribing indicators

MATERIALS AND METHODS

1 Duration of study

- The study will be conducted for a period of 6months.

4.2 Site of the study

- Study will be conducted at tertiary care hospital.

4.3 Study design

- A hospital based observational study.

4.4 Sources of Data and Materials:

- Patient case sheet
- Medication/treatment chart
- Suitable design documentation form
- Laboratory data report

4.5 Study Criteria:

Inclusion Criteria

- Age 18 years and above.
- Inpatients in general medicine departments

Exclusion Criteria:

- Inpatients of other departments
- Incomplete medical records.
- Pregnant and lactating women

4.6 Study Materials:

- Prescriptions
- Case sheets

4.7 Method of Data Collection:

- Data collection form

Procedure

- The protocol was submitted to Institutional Human Ethical Committee, ABIPER, Bangalore for human ethical approval.
- Those patients who were satisfied the study criteria were enrolled into the study and patient informed consent was obtained.
- The patient's demographic, clinical and medication data were collected into specifically designed data collection form.
- all the data was reviewed from the angle of evaluation of drug prescription pattern using world health organisation prescribing indicators

Analysis of Data

The collected data was assessed by descriptive statistics. The study data were analysed by using statistics such as average and percentages.

Human Ethical Clearance Committee Approval:

Human ethical clearance committee of ABIPER, has approved the study and issued a letter of permission to conduct the study

RESULTS AND DISCUSSIONS

• Demographic details of the study population

Among 143 patients enrolled in the study, 60.13% (n=86) were male and 39.86% (n=57) were females.

Table 1: Gender Wise Distribution Of Patients

GENDER	NUMBER	PERCENTAGE
MALE	86	60.13%
FEMALE	57	39.86%
TOTAL	143	100%

• Number of drugs per encounter

This prescribing indicator helps to identify the practice of polypharmacy by the prescribers in hospitals. The study concluded that the average numbers of drugs per encounters was 3.5

Table 2: Number of Drugs per Encounter

Number	Frequency of prescriptions	Percentage
1 drug	8	5.59%
2 drugs	23	16.08%
3 drugs	31	21.67%
4 drugs	53	37.06%
5 drugs	19	13.28%
More than 5 drugs	9	6.29%
Total	143	100%

• Number of drugs prescribed by brand and generic

In the current study 37.10% of drugs were prescribed in generic name and 62.9% of drugs were prescribed by brand names. This is similar to the study conducted by the satish et al, which started that the generic prescribing was 38.3%, but Lenjisa JL⁷ et al 2014, study shows that 96.6% of drugs, were prescribed in generic name. This indicates that in some hospitals, antibiotics prescriptions are done with generic names and which helps to in patients compliance, low cost of therapy, reduce risk of errors in drugs names such as sound alike drugs and look alike drugs and also helps to reduce delay of drugs to dispensed by giving alternative drugs rather than the particular brand drugs.

Table 3: Number of Drugs Prescribed By Brand and Generic

Prescription	Number	Percentage
BRAND	322	62.89%
GENERIC	190	37.10%
TOTAL	512	100%

• Use of antibiotics

The percentage of drug encounters with an antibiotics were prescribed was 61.5% . This is similar to the studies of Satish et al and Lenjisa⁷ JL et al i.e 57.07% and 58% respectively. But the study conducted by Ramachandra⁸ et al got 22.6% of antibiotics prescribing. This shows that there was a variation in the treatment guidelines and irrational prescribing of antibiotics leads to resistance and higher cost of therapy and loss of resources. Majority of antibiotics prescribed for prophylaxis rather than specific treatment. So it was used as a barrier therapy for all types of infections and this leads to ADRs and resistance to microorganisms, which is a global problem

Table 4: Use of Antibiotics

Number of Antibiotic	Frequency	Percentage
0 ANTIBIOTICS	55	38.46%
1 ANTIBIOTICS	43	30.06%
2ANTIBIOTICS	13	9.09%
3 ANTIBIOTICS	16	11.18%
4 ANTIBIOTICS	9	6.2%
MORE THAN 4	7	4.89%
TOTAL	143	100%

• Use Of Injections

In the current study, 57.30% of drugs prescribed was injections which was lesser than the finding done by Satish et al, in the hospital of Mandya district, the increase of utility of injection may be due to the higher efficacy of injections than oral medications, and also the study was conducted for the in-patients so that patients were in serious conditions are treated and injections have fast onset of action.

Table 5: Use of Injections

Number of Injections	Frequency	Percentage
0 INJECTION	61	42.65%
1 INJECTION	49	34.26%
2 INJECTION	24	16.78%
3 INJECTION	5	3.4%
MORE THAN 3	4	2.79%
TOTAL	143	100%

• Prescribing from the NLEM :

In the study out of 512 drugs used, 459 drugs were included in the essential drug list 2011, i.e 96.095% this is less than the Findings of Lenjisa⁷ et al, which shows that 98.7%, of drugs were from EDL. The drug's use from the EDL, helps in maximum safety of drugs use helps to satisfy the health care needs the population and for the optimal use of limited resources. The selection of drugs for framing EDL, is continuing process which conditions as well as the pharmaceutical and pharmacological knowledge.

Table 6: Prescribing from NLEM

Number of Drugs	Frequency	Percentage
1 DRUG	17	11.88%
2 DRUGS	29	20.27%
3 DRUGS	28	19.58%
> 3 DRUGS	70	48.95%
TOTAL	143	100%

CONCLUSION

- The use of antibiotics was much more in the study, which should be minimize so that antimicrobial resistance can be minimized.
- The use of injection should be detected as it is expensive and requires trained health care personnel and chances of sepsis at the site of administration adherence to EDL is important for promoting rational prescribing of medicines, and the study shows that medicine were prescribed rationally more than 50% of all medicines were prescribed and dispensed irrationally
- The use of more and more antibiotics can be only reduced by educating the prescribers and patients regarding various disease and their spread conditions, antibiotic resistance and also encouragement of use of vaccinations must be done in order to reduce to use

frequent use of antibiotics so that it may not cause resistance in the body.

- Poly pharmacy leads to drug chances of interactions and risk of ADRs and revealed that most of the patients were prescribed with the poly pharmacy and in brand names And also in the pharmacy more and more generic drugs to be sold with communications of the prescribers so that more generic drugs can be prescribed instead of brand drugs by the health care providers or prescribers.

ACKNOWLEDGEMENT

As he is the first and the last, we thankfully bow with reverence before the almighty that is the source of all wisdom and knowledge, the creator who by his wishes and blesses made us to attain successful completion of this dissertation.

With great pleasure and sense of gratitude, we express our most cordial and humble thanks to our eminent respected guide Dr. RITTY SARA CHERIAN, Professor, Department of Pharmacy Practice, ABIPER, for his valuable guidance, keen interest, inspiration, unflinching encouragement and moral support throughout our project work. We express sincere thanks to him for stimulating discussion, meticulous guidance, illimitable enthusiasm and support since the beginning of our course.

We express our deepest sense of gratitude to PROF.K.RAMKUMAR, Principal of ABIPER, for his sincere gratitude and support.

We express our deepest sense of gratitude to our honourable chairman Dr. B.A.VISHWANATH, for providing the facilities and extending his support.

CONFLICT OF INTEREST

There was no conflict of interest among the authors.

BIBLIOGRAPHY

1. Jain S, Upadhyaya P, Goyal J, Kumar A, Jain P, Seth V, Moghe VV, A systematic review of prescription pattern monitoring studies and their effectiveness in promoting rational use of medicines; PerspectClin Res. 2015 Apr-Jun; 6(2):86-90.doi: 10.4103/2229-3485.154005
2. Hussain S, Yadav SS, Sawlanj KK, KhattriS.Assessment of drug prescribing pattern using world health organization indicators in a tertiary hospital. Indian public Health; 2018;62:156-58
3. Chandekar UK, Rataboli PV, Article A study of drug prescribing pattern using WHO prescribing indicators in the state of Goa, India; International Journal of Basic & Clinical Pharmacology. DOI: 10.5455/2319-2003.ijbcp20141221 November-December 2014; 3(6):1057
4. WHO. Action Programme for Essential Drugs. How to Investigate Drug use in Health Facilities. Geneva: WHO; 1993.
5. Raj K, Kamlesh K, Kajal HL. A study of drug prescribing pattern among diabetic patients in a tertiary care teaching institute in North India. J Drug Deliv Ther. 2013; 3(2):56-61. DOI https://doi.org/10.22270/jddt.v3i2.431
6. WHO: World Health Organization promoting rational use of medicines: core components. WHO Policy and Perspectives on medicine no. 5 Document WHO/EDM/2002.3. 2002, Geneva: WHO
7. Hussein M, Lenjisa JL, Woldu MA, Tegegne GT, Umeta GT, et al. Assessment of Drug Related Problems Among Hypertensive Patients on Follow up in Adama Hospital Medical College, East Ethiopia. ClinPharmacolBiopharm 2014; 3:122. doi:10.4172/2167-065X.100012
8. Ramachandran G, Rohith V, Isabella Topno ;Evaluation of prescribing pattern of anti-diabetic drugs using WHO prescribing indicators in a tertiary care hospital in Puducherry: A cross-sectional study The Pharma Innovation Journal 2015; 4(5)
9. World Health organization. Antimicrobial resistance. Available at: <http://www.who.int/mediacentre/factsheets/fs194/en/Updated.April 2015/> Accessed September 2017.
10. Gowthami B, Spurthi, Tippaluru, Afreen, S. Drug Utilization Evaluation of Antibiotics in General Medicine Department of a Tertiary Care Hospital. Value in Health. 2016; 8:302-304. 10.1016/j.jval.2016.08.645.