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Assessment of Drug Use Pattern and WHO Prescribing Indicators in the Department of Obstetrics and Gynaecology Prospectively



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ABSTRACT

Evaluation of appropriate use of drugs is an essential element in achieving quality of health and medical care for patients and the community. The aim of our study was to evaluate the drug use patterns in gynaecology and obstetrics department using WHO prescribing indicators. A prospective observational study was carried out in the inpatient department of obstetrics and gynecology for a period of 2 months in a tertiary care hospital. During our study period, a total 112 prescriptions, with 844 drugs were analyzed. Obstetrics cases were found to be the highest (32.14%). Average number of drugs per prescription is 7.5, which indicates polypharmacy. The percentage of encounters in which an antibiotic or injection was prescribed was 66.07% (n=74) and 67.9% (n=76). The percentage of drugs prescribed by generic name and from an essential drug list was 41%(n=346) and 99.5%(n=840) respectively. The most commonly prescribed antibiotics were metronidazole 26.8%, ceftriaxone 19.4%.The most commonly used vitamins were vitamin B complex 10.2%. The prescribing indicators deviate from the WHO standards. The study results show that vitamin B complex and ferrous sulphate were frequently used drugs. Metronidazole was the common antibiotic recommended.



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INTRODUCTION

The World Health Organization (WHO) defined rational use of drugs as patients receiving medications appropriate to their clinical needs in doses that meet their own individual requirements for an adequate period of time and at the lowest cost to them and their community.¹ In developing countries, assessment of drug use patterns with the WHO drug use indicators are widely used. The World Health Organization (WHO) has reported that around 50% of all medicines are inappropriately prescribed, dispensed or sold.²

Irrational use of drugs results in adverse reactions, increased cost of therapy, unsafe and ineffective treatment, increased morbidity and mortality, wastage of resources.^{1,3} Irrational prescription is a universal problem, especially in case of pregnancy where extra need and care should be taken. Drugs such as multivitamins are largely prescribed for patients without nutritional problems and antibiotics are also prescribed without evidence of bacterial illness.⁴ The aim of our study was to evaluate the use of drug use patterns in Gynaecology and Obstetrics department using WHO prescribing indicators. Vitamins and minerals are highly prescribed drugs in this department.³

World Health Organization developed a set of core prescribing indicators to measure the degree of polypharmacy, the tendency to prescribe drugs by generic name, the level of use of antibiotics and injections and the degree to which the prescribing practice is conformed to the essential drug list, formulary or standard treatment guidelines.⁵

Appropriate use of drugs helps in improvement of quality of health and medical care for patients and community also where we can identify whether a facility is exceeding or underperforming by defined norms of practice and to obtain baseline information for continuous monitoring.¹

MATERIALS AND METHODS

This prospective observational study was carried out in the inpatient department of Obstetrics and Gynaecology for a period of 2 months (April 2016- June 2016) in a tertiary care hospital located in a rural setting. The WHO prescribing indicators were used to analyze the rationality of prescription by means of following parameters:

- a) Average number of drugs per encounter = Total number of drugs prescribed/Total number of encounters sampled.
- b) Percentage of drugs prescribed by generic name=(Number of drugs prescribed by generic name/Total number of drugs prescribed) x100
- c) Percentage of encounters with an antibiotic prescribed=(Number of patient encounters with an antibiotic/ Total number of encounters sampled) x100
- d) Percentage of encounters with an injection prescribed=(Number of patient encounters with an injection prescribed/Total number of encounters sampled) x100
- e) Percentage of drugs prescribed from essential drugs list=(Number of drugs prescribed from essential drugs list/Total number of prescribed drugs) x100 [6]

Moreover, we also evaluated the extent of use of vitamins and minerals used, in females along with the commonly prescribed antibiotics. The obtained data was entered in Microsoft excel and analyzed.

RESULTS

Total number of cases collected were 112.

Age distribution: Out of 112 cases, the different age groups were 15 -30 years, 31 – 50years and > 50 years. Number of patients in 15-30 age group were 54 (48.21%), 31-50 age group were 50 (44.64%) and >50 years were 8(7.14%). These results indicate that the patient age groups 15-30years and 31-50 years were commonly prone to gynaecological diseases.

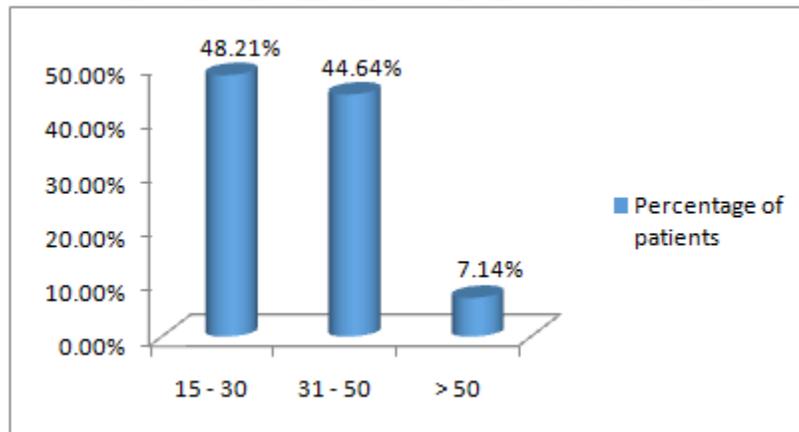


Figure 1. Age Distribution

Distribution of diagnosis of patients: In our study, the number of obstetrics cases stands high (32.14%) than the gynaecological diseases which include abnormal uterine bleeding with anemia (21.42%), followed by fibroid uterus (17.85%).

TABLE 1 Distribution of Diagnosis of patients

Diagnosis	Total number	Percentage
AUB with Anemia	24	21.42 %
Fibroid uterus	20	17.85 %
Obstetrics	36	32.14 %
PID	8	7.14 %
Ovarian cyst	8	7.14 %
others	16	14.28 %

WHO prescribing indicators for assessment of drug use pattern:

The average number of drugs per encounter was found to be 7.5. Percentage of encounter with antibiotics and injections were also high with 66% and 67.9% respectively. The percentage of drugs prescribed by Generic names was only 41% and the essential drug list was 99.5%. The results illustrate that the prescribing pattern of health care providers in the study site was irrational.

Table 2 WHO Prescribing Indicators used for assessment of drug use pattern

Prescribing Indicators	Total drugs	Value
Average number of drugs per encounter	844	7.5
Percentage of encounter with antibiotics	74	66.07 %
Percentage of encounter with injections	76	67.9 %
Percentage of drugs prescribed by generic	346	41 %
Percentage of drug from essential drug list	840	99.5 %

Frequently used classes of drugs: The most commonly prescribed drugs in obstetrics and gynaecology department were minerals 16.8% (142), followed by antibiotics 15.8% (134) and vitamins 14.2% (120). The results indicated that minerals, vitamins and antibiotics were the

highly prescribed drugs. Predominantly prescribed antifungals were fluconazole and albendazole, hormones were progesterone, norethisterone and regesterone. Antifibrinolytics given were Tranexamic acid.

Table 3 Frequently used classes of drugs

Classes of drugs used	Total number	Percentage
Minerals	142	16.8%
Antibiotics	134	15.8%
Vitamins	120	14.2%
Antifungals	38	4.5%
Hormones	22	2.6%
Antifibrinolytics	22	2.6%
Others	368	43.6%

Commonly used vitamins and minerals in Obstetrics and Gynaecology

The most commonly used vitamins were Vitamin B complex (10.2%) followed by folic acid (2.84%) and minerals were ferrous sulphate (8.53%) and calcium (8.2%).

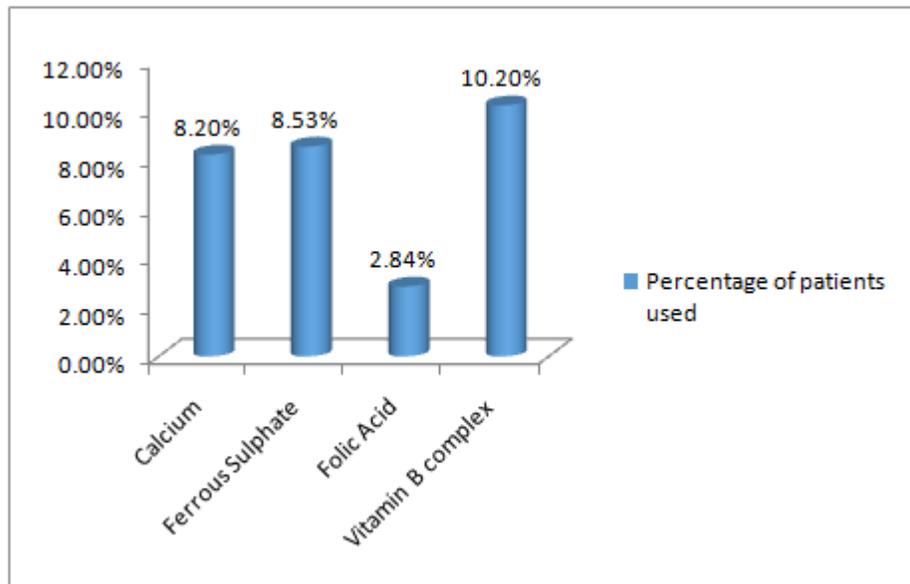


Figure 2 Commonly used vitamins and minerals

Frequently used classes of antibiotics: The most commonly used were metronidazole followed by ceftriaxone and ciprofloxacin.

Table 3 Frequently used classes of antibiotics

Classes of antibiotics	Total number	Percentage
Metronidazole	36	26.8%
Ceftriaxone	26	19.4%
Ciprofloxacin	22	16.4%
Cefixime	20	14.9%
Amoxicillin	10	7.4%
Others	20	14.9%

DISCUSSION

Sharma RS says that 20 to 35 years represents the normal reproductive age group, here in this study majority of the sample subjects belong to the age group 15-30.¹ Vibha *et al.*, states the prevalence of gynaecological comorbidities among reproductive age group women is 45.1%.⁷

In our study vitamin B complex was given frequently which in contrast with other studies which says iron, calcium and folic acid were the most frequently used drugs in pregnancy.^{8,9,10} There are chances for developing deficiencies of vitamins and minerals among women due to physiological and hormonal imbalances, hence supplementation insufficiencies are justified but it doesn't mean that every women has to be provided the above without valid lab reports or symptoms. The benefit of rational drug is essential in pregnancy not only for the recovery of maternal health, but also for the safe development of the foetus.³

World Health Organization developed a core prescribing indicators to measure the degree of polypharmacy, the tendency to prescribe drugs by generic name and the overall level of use of antibiotics and injections. The degree to which the prescribing practice conformed to the essential drug list, formulary or standard treatment guidelines were also measured by searching for the number of drugs prescribed from essential drug list available.¹

Average number of drugs per patient is very high which is in contrast with other studies and also against the standards. This is an indicator of polypharmacy. Percentage of injections encountered

as per WHO is 13.4-24.1%, but our study results is deviated from the standard. The use of antibiotics expressed in percentage is similar to the study conducted by Shanmugasundaram.² The drugs prescribed are from the essential medicine list which is in favor to standards facilitating the availability of drugs for the patient. Since it's a government hospital most of the drugs are given free of cost. Harsh *et al.*, concludes that percentage of drugs prescribed in brand name and Essential Medicine List are very low which has disparity with our study.¹ Here, metronidazole is frequently used antibiotic, there are studies which supports the habitual use of this drug, whereas cephalosporins are the first choice of antibiotics nowadays.³ Prescribing indicators are useful for investigating potential medicines' use in critical areas. Such identified problem areas may alert health managers of potential drug use problems that require detailed examination and subsequently focus of improvement.

CONCLUSION

The results obtained from this study shows that the most commonly prescribed vitamin is B complex, followed by folic acid and in minerals ferrous sulphate and then comes calcium. The WHO prescribing indicators have been used to evaluate the prescribing pattern in a government hospital which is not satisfactory, but the drugs have been prescribed exclusively from essential medicine list. The use of injections should be regulated as it deviates from the WHO standards. The rational prescription must be implemented to reduce burden on patients in all aspects to provide effective treatment. The involvement of a clinical pharmacist is preferred to evolve the treatment strategies to promote patient care.

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