



ASSESSMENT OF PRESCRIPTION OF PREGNANT & LACTATING WOMEN FOR DRUG USE PATTERN & CONTRAINDICATED DRUGS IN A TEACHING HOSPITAL: A PROSPECTIVE STUDY

Pharmacology

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ABSTRACT

The physiological state of pregnancy has an effect on the pharmacokinetics of drugs administered with attendant risk on the developing foetus. Therefore, categorisation of drugs according to pregnancy risk should be taken into consideration before a drug is prescribed for pregnant women. The study aimed to assess the prescription of study subjects for drug use pattern & to identify the contraindicated drugs. A prospective observational study was carried out for a period of 6 months in a tertiary care teaching hospital. Patients admitted in the department of obstetrics and Gynaecology was selected randomly and 150 patients were enrolled in to the study by considering the study criteria. A total of 150 patients were enrolled and the prescription assessed revealed that among the age groups, the rate of pregnancy is higher between 18- 24 years (48.67%) and least in 30 years and above (11.34%). Results revealed varying level of prescription in pregnant and lactating women.

KEYWORDS

Pregnancy, Trimester, Gravida, Lactation, Therapeutic Class of Drugs, WHO Core Indicators, NLEM.

INTRODUCTION

Worldwide, more than half of all medicines are prescribed, dispensed, or sold improperly, and half of the patients fail to take them correctly. Moreover, about one third of the world's population lacks access to essential medicines. A survey conducted in hospitals in southern Ethiopia investigated their prescription patterns concluded that irrational prescribing, as evidenced by high average number of drugs prescribed per encounter, high percentage of injections, and high percentage of antibiotic use, was prevalent in the studied region. However, another study found good signs of rational drug prescribing at Jimma Hospital, south west Ethiopia.

Irrational prescribing is a global problem. Bad prescribing habits lead to ineffective and unsafe treatment, exacerbation or prolongation of illness, distress and harm to the patient, and higher costs. Irrational prescribing patterns are perpetuated through patient pressure, bad example of colleagues, and high-powered salesmanship by drug company representatives. In teaching hospitals, new graduates will copy them, completing the vicious circle. Changing existing prescribing habits becomes very difficult.

Assessment of drug use patterns with the WHO drug use indicators is becoming increasingly necessary to promote rational drug use in developing countries. Before activities are started to promote rational drug use, an effort should be made to describe and quantify the situation. Several well-established survey methods are available for this purpose. One assessment method is a prescribing and patient care survey using the WHO health facility drug use indicators.

Hence the present study was undertaken to evaluate the drug use pattern in pregnant & lactating patients attending the OBG inpatient department & to generate data on demographics, %age of drug use, route of administration, type of dosage form, usage of essential medicines in accordance with WHO prescribing core indicators. Feedback from the study helps the prescriber & institutional authorities to review their prescribing practises & modify if necessary to facilitate better health care delivery.

MATERIALS & METHODS

A prospective observational study was carried out for a period of six months in a Tertiary care hospital. Patients admitted to gynaecology department were selected and enrolled into the study by considering inclusion and exclusion criteria & after obtaining the written consent form from the patient. The enrolled patient's prescriptions were intensively monitored during their hospital stay. All the necessary and relevant data were collected from in patient case sheet, treatment charts. Demographic details of the patients like age, diseases, patient medication history for their class of drug, dosage form, duration of use and prescriptions were assessed by using WHO prescribing indicators in a suitably designed "Patient Data Collection Form". Case sheets of In-Patients admitted in Gynaecology department at HKES's Basaveshwar Teaching & General Hospital. Inclusion criteria includes; Pregnant & lactating women admitted in department of gynaecology, who are willing to participate and women prescribed with at least one medication. Exclusion criteria includes pregnant & lactating women with HIV, are not willing to participate, women with

end stage disease and with incomplete information. Prior to the study, Ethical clearance was taken from the HKES's MTRIPS Institutional Review Board.

RESULTS

Socio demographic data of study subjects

• Age distribution of Gynec patients

A total of 150 prescriptions were analyzed & among them 73 (48.67%) patients of age range between 18 -24 years followed by 60 (40%) patients of age range between 25 – 29 years & 17 (11.34%) of patients of age range between 30 years & above.

• Educational Status of Gynec Patients

Among 150 patients enrolled in the study the educational status of the patients depicts that there were 05 (3.34%) patients were illiterate, followed by 68 (45.34%) patients were of primary education, 26 (17.34%) patients has qualified high school, 46 (30.67%) patients has qualified Pre-university & finally but not the least 05 (3.34%) patients has Graduated Degrees.

• Economic Status of Patients:-

Among 150 patients enrolled in the study the economic status of the patients reveals that there were 11 (7.34%) patients has income of 5-10k, followed by 78 (52%) has income of 11-20k, 26 (17.34%) patients has income of 21-30k, 16 (10.67%) patients has income of 31-40k & finally 19 (12.67%) patients has income of 41-50k.

• Gravida of the Gynec Patients:-

In a total of 150 prescriptions, 53 (35.34%) patients being primigravida, followed by 52 (34.67%) patients being secundigravida & finally 45 (30%) patients being multigravida.

• Trimester of the Gynec Patients:-

In a total of 150 prescriptions, 7 (4.67%) of them belonged to the first trimester, followed by 9 (6%) of them belonged to the second trimester & majority of them i.e. 134 (89.34%) belonged to the third trimester.

Prescription of pregnant & lactating women for drug use pattern

• Therapeutic Class of Drugs prescribed

In a total of 150 prescriptions, a total of 1458 drugs prescribed among them 399 (27.36%) were antibiotics, followed by 147 (10.09%) were antacids, 204 (13.10%) were analgesics, 134 (9.20%) were IV fluids, 47 (3.23%) were anti-hypertensives, 430 (29.50%) were supplements & 97 (6.66%) were other class of drugs.

• Prescription of Intra Venous Fluids

In a total of 150 patients, 58 (3.98%) were Ringer lactate followed by 40 (2.75%) 5% Dextrose, 33 (2.27%) Dextrose Normal Saline & 1 (0.069%) of Normal saline & fructo-dextrose respectively.

• Prescription of Drugs according to Dosage Forms

Table 1:- Prescription of Drugs According to Dosage Forms

Sl. No	Drugs According to Dosage Form	Total No. of Drugs (n=1458)	Percentage (In %)
I	Tablet	608	41.71%

2	Capsule	120	8.23%
3	Powder	127	8.71%
4	Syrups	10	0.68%
5	Injections	411	28.18%
6	Infusions	134	9.20%
7	Ointment	43	2.94%
8	Inhalers	5	0.35%

• Class of Antibiotics Prescribed

Table 2:- Class of Antibiotics Prescribed

Sl. No	Antibiotics class of Drug	Total no. of Antibiotics Prescribed	Percentage (In %)
1	Cephalosporins	158	39.60%
2	Aminoglycosides	31	7.77%
3	Beta-Lactam Antibiotics	57	14.28%
4	Anti-protozoal	136	34.09%
5	Antiviral	3	0.75%
6	Others	14	3.51%

• Route of administration of prescribed drugs

In a total of 1458 drugs prescribed, 865 (59.33%) were given by oral route, followed by 545 (37.38%) were given as parenterals, 43 (2.95) was given by extradermally & 5 (0.35%) were given as inhalers.

WHO prescribing Core Indicators:-

• Average no of Drugs per Medical prescription

For 150 patients enrolled in the study there were 1458 drugs prescribed by 150 encounters with an average of 9.714 drugs prescribed per medical prescription.

• Percentage of drugs prescribed by generic & brand names:

Among 1458 drugs prescribed there were 205 (14.06%) drugs prescribed by generic name, followed by 1253 (85.93%) drugs prescribed by brand name.

• Percentage of Drugs prescribed from NLEM

Among 150 patients enrolled in the study there were 1458 drugs prescribed & among them 437 (29.97%) drugs were prescribed from NLEM.

Percentage of prescriptions with antibiotic and injectable drugs

In a total of 150 patients, the total no of prescriptions with an antibiotic prescribed was 399 & the percentage of prescriptions with an antibiotic prescribed is 27.35%. In a total of 150 patients, the total no. of prescriptions with an injection prescribed was 545 & the percentage of prescriptions with an injectable prescribed is 37.39%.

DISCUSSION

Vitamins and mineral supplements play a pivotal role in the prevention of maternal and child mortality and morbidity. The study carried out by Prasanand S et al shown that the highest prescribed therapeutic class of drugs were supplements (57.26%) which is almost similar to our findings indicating the most frequently prescribed drugs were supplements.

A total of 134 intravenous fluids were prescribed to 150 OBG in patients, among which ringer lactate was most frequently prescribed 58(43.28%). As most of pregnant women suffer with hyperemesis gravidarum, it is necessary to manage the electrolyte imbalances for which ringer lactate is the preferred IVF. Which is complied with the study of Sasidharan et al.

Our study findings showed that out of 1458 drugs , most of the prescribed drug is in the tablet dosage form 608(41.71%), followed by capsules 120(8.23%) and least are the inhalers 5(0.35%).

A total of 399 antibiotics were prescribed, out of which majority were cephalosporins 158(39.60%) as treatment with cephalosporins during pregnancy does not seem to present a detectable teratogenic risk to the fetus and cephalosporins is followed by anti-protozoal 136 (34.09%)and this study is findings is similar to what was reported by Sara .A .Hanfay et all and Abubakar K et al.

A total of 1458 drugs prescribed, among them most of patients used oral dosage forms across all trimesters 865 (59.33%), the simplest route for any patient to take medication. Parenterals were also frequently used in all trimesters of gestations. This may be because many pregnant women were admitted for hyperemesis gravidarum whom they took different parenterals such as antiemetics, analgesics,

IVF and antibiotics.

The prescriptions were analyzed by using WHO prescribing core indicators. The average number of drugs per prescription was 9.72 which is almost similar to the study findings of Shashidharan et al with an average of 4.97.

Among 1458 drugs prescribed majority of the drugs prescribed were by brand names 1253 (85.93%) followed by generic names 205(14.06%). The study conducted by ShaileshY et al shown that 74.50% drugs were prescribed by brand names followed by 25.49% generic names, which justify our results or findings .

Among 1458 drugs, the antibiotics were prescribed in 399 prescriptions (29.97%). A study conducted by MesfinFukadu et al shown that in 456 encounters (39.1%) antibiotics were prescribed which were similar to our studies.

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