

ORIGINAL RESEARCH

Evaluation of Drug Prescription Pattern in Pregnant Women Attending Antenatal Out Patient Department: An observational study

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Received: 19 July, 2023

Accepted: 24 August, 2023

ABSTRACT

Background: The present study was conducted for assessing the pattern of drug prescription pattern in pregnant women attending antenatal out patient department. **Materials & methods:** 200 female subjects were enrolled. Prescribing Practices of Pregnant women attending the OPD was evaluated. Complete demographic details of all the subjects were obtained. The detailed data on the prescription records given in the past and at the time of enrolment were recorded from OPD case papers. **Results:** Ranitidine and pantoprazole were prescribed in 26 percent and 23 percent of the cases respectively. Aspirin and atenolol were described in 16 percent and 4 percent of the cases respectively. Insulin and thyroxine were prescribed in 6 and 4 patients respectively. Betamethasone was prescribed in 5.5 patients. Metronidazole and clotrimazole were prescribed in 10.5 patients and 11 patients respectively. Amoxicillin and cefixime were prescribed in 9.5 patients and 12 patients respectively. Paracetamol was prescribed in 12 patients. Azithromycin and Erythromycin were prescribed in 8.5 percent and 7 percent of the patients respectively. **Conclusion:** Pregnant patients with conditions such as diabetes, hypertension, and epilepsy were prescribed the right medications based on their risk-benefit ratio.

Key words: Pregnant, Drug, Prescription

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INTRODUCTION

In pregnancy drug treatment presents a special concern due to the threat of potential teratogenic effects of the drug and physiologic alterations in the mother affecting her responses to medication. The pharmacokinetics of certain drugs is altered by the physiological changes and certain drugs can cross the placenta to cause harm to the fetus. Also, there is increase in the volume of distribution of some soluble drugs. Placental transfer is a key factor in the potential teratogenicity of a drug.¹⁻³ Exposing pregnant women to drugs has been of particular concern with regard to the development of congenital malformations and stillbirths. Abnormalities occur in approximately 2–3% of all newborns with an estimated 1% the result of prescription drug use. It has been suggested that 10% of these abnormalities may be causally associated with prescription drug use.⁴⁻⁶ There are only about twenty drugs or groups of drugs that are known to be teratogenic in humans. However, the safety profile of

these medications is not directly established in human pregnancy. This is because clinical trials of drugs exclude pregnant women due to ethical and legal reasons.⁷ Therefore, there is a lack of knowledge about the harmful effects of these drugs, and drug use cannot always be avoided in pregnancy. Hence; the present study was conducted for assessing the pattern of drug prescription pattern in pregnant women attending antenatal out patient department of a tertiary care hospital.

MATERIALS & METHODS

The present study was conducted for assessing the pattern of drug prescription pattern in pregnant women attending antenatal out patient department of a tertiary care hospital. Inclusion criteria for the present study included pregnant subjects in any trimester, attending antenatal OPD, ≥ 18 years of age, who presented with the prescription written on the OPD case paper. 200 female subjects were enrolled.

Prescribing Practices of Pregnant women attending the OPD was evaluated. Complete demographic details of all the subjects were obtained. The detailed data on the prescription records given in the past and at the time of enrolment were recorded from OPD case papers. All the results were recorded in Microsoft excel sheet and were analysed by SPSS software.

RESULTS

Mean age of the subjects was 27.5 years. Majority proportion of the subjects were educated up to level of secondary education (51 percent). 77 percent of the subjects were unemployed. 58 percent of the subjects were of multigravida while 42 percent were primigravida. Most common prescribed drugs were

alimentary tract drugs. Among them, ranitidine and pantoprazole were prescribed in 26 percent and 23 percent of the cases respectively. Aspirin and atenolol were described in 16 percent and 4 percent of the cases respectively. Insulin and thyroxine were prescribed in 6 and 4 patients respectively. Betamethasone was prescribed in 5.5 patients. Metronidazole and clotrimazole were prescribed in 10.5 patients and 11 patients respectively. Amoxicillin and cefixime were prescribed in 9.5 patients and 12 patients respectively. Paracetamol was prescribed in 12 patients. Azithromycin and Erythromycin were prescribed in 8.5 percent and 7 percent of the patients respectively.

Graph 1: Demographic data

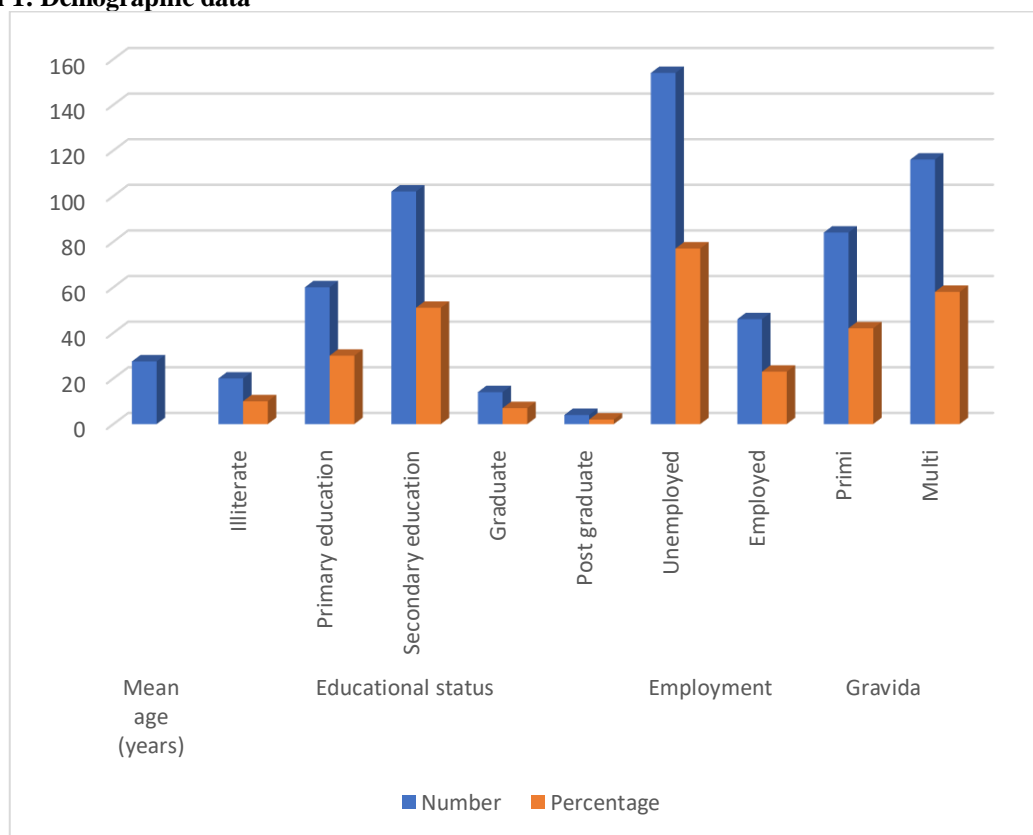


Table 2: Drug prescribing pattern

Drug class	Number	Percentage	
Alimentary tract drugs	Ranitidine	52	26
	Pantoprazole	46	23
	Ondansetron	14	7
	Rabeprazole	9	4.5
	Others	18	9
Cardiovascular agents	Aspirin	32	16
	Atenolol	8	4
	Digoxin	9	4.5
	Others	8	4
Hormones	Insulin	12	6
	Thyroxine	8	4
	Betamethasone	11	5.5
	Prednisolone	4	2

Antimicrobials	Metronidazole	21	10.5
	Clotrimazole	22	11
	Amoxicillin	19	9.5
	Cefixime	24	12
	Azithromycin	17	8.5
	Erythromycin	14	7
	Anti-malarial	8	4
Nervous system	Paracetamol	15	7.5
	Phenytoin	8	4
	Valproate	13	6.5
Others		23	47

DISCUSSION

Despite the lack of adequate studies on safety of prescription drugs for pregnant women, available evidence has shown that healthcare professionals prescribe and pregnant women take a surprisingly large number of drugs. Furthermore, 86% of the women had taken at least one prescription medication during their pregnancies. Despite several physiological, pharmacokinetic and pharmacodynamic changes occurring during pregnancy, pregnant women are still considered therapeutic orphans, since the majority of available drugs were not adequately studied in pregnancy.⁶⁻⁹ Pregnant women have been often excluded from clinical trials and evidences generated from animal-based studies are not often suitable for extrapolation to indicate teratogenicity in humans. Hence, drug use by pregnant women is considered experimental in most clinical practices. However, the use of medications is sometimes mandatory in the treatment of women of reproductive age, breast feeding and during pregnancy. Healthcare professionals should ensure that optimal medications are prescribed when treating women of childbearing potential with chronic diseases.⁸⁻¹⁰

Mean age of the subjects was 27.5 years. Majority proportion of the subjects were educated up to level of secondary education (51 percent). 77 percent of the subjects were unemployed. 58 percent of the subjects were of multigravida while 42 percent were primigravida. Most common prescribed drugs were alimentary tract drugs. Among them, ranitidine and pantoprazole were prescribed in 26 percent and 23 percent of the cases respectively. Aspirin and atenolol were described in 16 percent and 4 percent of the cases respectively. Al-Hamimi JZ et al evaluated the patterns of prescription drugs use among women attending antenatal clinic. A total of 105 pregnant women were included in the study. Among the recruited pregnant women, 35 (33.3%) had at least one chronic disease. The average number of drugs prescribed per patient per prescription during the period of pregnancy was 2.33 ± 1.43 . Vitamins and minerals were the most frequently prescribed class of drugs (30.60%) followed by analgesics (11.19%) and antidiabetic drugs (10.13%). According to the Food and Drug Administration risk classification, most of the prescribed drugs were from category B (30.0%)

and C (27.14%). No drug was prescribed from category X. There was a significant decrease in prescribing category A drugs over the three trimesters (20.7%, 12.7%, and 9.3%, respectively) ($P < 0.047$). The study gave an overview of the extent of drug prescription during pregnancy and increases the awareness of health-care providers and women about the potential risks of drug use during pregnancy.¹⁰ Insulin and thyroxine were prescribed in 6 and 4 patients respectively. Betamethasone was prescribed in 5.5 patients. Metronidazole and clotrimazole were prescribed in 10.5 patients and 11 patients respectively. Amoxicillin and cefixime were prescribed in 9.5 patients and 12 patients respectively. Paracetamol was prescribed in 12 patients. Azithromycin and Erythromycin were prescribed in 8.5 percent and 7 percent of the patients respectively. Bedewi N et al investigated drug utilization pattern among pregnant women attending maternal and child health clinic of tertiary hospital. A total of 369 pregnant women medical records were reviewed. The mean age of pregnant women was 24.34 (± 4.48) years and the majority of them were within the age of 18-25 years. About three-fourths ($n = 277$, 75.1%) of them were urban residents. Besides, 314 (85.1%) women had taken at least one drug with a total of 377 drugs prescribed. From which, supplemental drugs accounted majority of the drug therapy (84.88%) whereas non-supplemental drugs (15.12%) were used by 41 pregnant women during the review period. According to Food and Drug Administration FDA pregnancy risk classification, 320 (84.88%) drugs were prescribed from category A; 33 (8.75%) drugs were from category B; 19 (5.04%) drugs were from category C and 5 (1.33%) drugs were from category D. There was no drug prescribed from category X. As this result indicated, there is a decrease in the prevalence of drug use from Category A to X as the possibility of potential risk to fetus might outweigh the potential benefit to the mother. Some drugs were utilized from category D for treatment of chronic illnesses.¹¹

CONCLUSION

Pregnant patients with conditions such as diabetes, hypertension, and epilepsy were prescribed the right medications based on their risk-benefit ratio.

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