



AMERICAN JOURNAL OF PHARMTECH RESEARCH

Journal home page: <http://www.ajptr.com/>

Drug Prescription Pattern In Pregnant Women

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ABSTRACT

Women who are pregnant frequently experience various chronic medical diseases that requires either ongoing (or) intermittent treatment. Any prescription drug taken by a pregnant women could cause unforeseen consequences, which are extremely difficulty for healthcare professionals to avoid any danger to the mother (or) the foetus. A medicine prescription pattern aids in the assessing the prescription practices that target the pregnant population can lesion the baby's risk and also mom. Consequently, the study is carried out to assess the current prescription pattern and to acquire information about drug use among pregnant mothers. 150 expectant women participated in a prospective and observational research for a nine month time frame. The participant's treatment records, which were recorded using a case report form, and the subjects' interviews provided the pertinent data needed for the study. WHO assessed how the prescription pattern performed. Drug classifications and prescribing guidelines were based on the US FDA pregnancy category. The majority of subjects (42%) had only completed their secondary education, and 82% of them were unemployed. Pregnant women had mean BMI of 24.83.76kg/m², and 61.3% of the study's participants had a normal BMI. The majority of the patients (74%) were in their third trimester and was under the age of priming avidity (46%). Hospitalizations were primarily due to fever, gestational diabetes mellitus, and gestational hypertension in the patients. A total of 574 prescriptions were written, averaging 3.82 medications per prescription. 18.8% of patients and 16.2% of all patients, respectively had at least one antibiotic. 6.2% of prescriptions for medications were discovered to be inn generic form, while 92.1% of prescriptions were from the hospital formulary. About 98.6% of the participants were unaware of the dangers of the drug use while pregnant. Most pregnant women received antibiotic prescriptions. The majority of prescribed medications fall within category C. This study unmistakably shown the necessity for ongoing evaluation of drug prescribing practices during pregnancy in order to encourage more sensible drug use reduce the morbidity and mortality linked to therapy.

Keywords: Prescription, antibiotic, gestational hypertension

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Received 10 November 2022, Accepted 18 December 2022

Please cite this article as: Birudula A *et al.*, Drug Prescription Pattern In Pregnant Women. American Journal of PharmTech Research 2023.

INTRODUCTION

Pregnancy is defined as the carrying of offspring known as a foetus or embryo within female's uterus. The pregnancy period lasts 40 weeks. This period is divided into three trimesters by medical scientists. The first trimester lasts 0-12 weeks, followed by the second, which lasts 13-28 weeks and the third, which lasts 29-40 weeks.¹

Some chronic pathological conditions in pregnant women necessitate continuous or intermittent treatment (asthma, epilepsy etc) and hypertension. During pregnancy, new medical conditions can emerge and old ones can worsen (for example, migraine, headache, hyperacidity, nausea and vomiting) all of which necessitate drug therapy, as a result taking medication whether prescription over the counter or herbal becomes a major concern for pregnant women. According to recent research drug use during pregnancy is more than 60% of pregnant women take at least one type of medication during their pregnancy vitamin and iron supplements, analgesics, anti-infective and anti-histamines are the most commonly used drugs during pregnancy.^{2,3}

Pregnancy is a pathological state in which each medication taken by the patient may present a challenge and a concern to the health care team due to altered drug pharmacokinetics and drug crossing the placenta, which may cause harm to the foetus. The foetus could be harmed in a variety of ways. It has the potential to cause permanent damage to foetus. Medications taken by a pregnant women can be passed on the foetus especially during the first trimester and the first part of the second trimester. The fifth week after conception appears to be the most critical time for a foetus because it is when organogenesis occurs, which is a period of significant development, during these critical weeks of organ formation, the foetus matures rapidly, making it more vulnerable to outside influences such as medications.^{1,4}

Their consequences which may not be obvious immediately after birth as a result, the drug prescribing pattern should be changed with each trimester and must be specific without causing any harm to the foetus or mother.⁵ When ACE inhibitors are used during second and third trimesters of pregnancy for example, it can result in prolonged foetal hypertension, renal tubular dysplasia, growth retardation, and death. Potential negative effects that may not be immediately apparent after birth so every trimester should see a change in the medicine prescription schedule, which must be precise and free of any negative effects on the mother or fetes.⁶

The lack of data on whether a treatment will benefit the mother and foetus plus the fact that pregnant women are rarely included in clinical studies make difficult to know with certainty whether pharmaceuticals can be used during pregnancy. The risk to the mother and foetus is rising in the medical environment of today and there is also considering the use of diethyl stilbestrol on

1971's teratogenic consequences, The food and drug administration (FDA) of the United States created a system of the classification of all medications approved after 1983 into one five pregnancy risk categories for the purpose of assessing the pregnancy- risk associated with pharmacological treatments (A, B, C, D, and X).⁷

In women's category A- controlled research there is no indication of a risk to the foetus in the trimester, no evidence of risk in the second or third trimester, and the likelihood of foetal harm remote.

Category B – Either there are no controlled trails in pregnant women but animal reproduction research has revealed a negative affect that was not confirmed.

Category C – either study in animals have revealed adverse effects on the foetus and there are no controlled studies in women and animals.

Category X- foetal abnormalities have been shown in studies involving humans or animals or there is evidence of foetal danger based on human experience or both and the risk of using the medicine while pregnant obviously outweighs any potential benefits. In pregnant or potentially pregnant women, the medication is contraindicated. In addition to the risk of foetal exposure to teratogenic drugs, there are risks associated with lack of information.⁸

Medication beliefs have been shown to have a strong relationship with medication adherence. The patients knowledge and ability to acquire knowledge are important in the formation of beliefs.²

A drug prescribing pattern in pregnancy can help determine how much room for improvement there is in current clinical practice. There is no such study at our hospital. Previously for the safety and efficacy of drugs prescribed during pregnancy with this mind, the purpose of this study was to access drug prescribing patterns among pregnant women and describe the pregnancy risk level of medications prescribed during pregnancy based on the USFDA pregnancy risk classification of drugs. In this era of rising abortions and foetal abnormalities, evaluating drug prescribing practice in a pregnancy is critical. Because there are fewer clinical studies on pregnant women, a drug prescribing pattern is always an asset to the new era of pharmacotherapy.¹¹

MATERIALS AND METHOD

Patients were enrolled in the study after providing prior consent and considering inclusion and exclusion criteria. All necessary and relevant baseline information was gathered on a "Patient data collection form," which included patient demographics such as age, socioeconomic status, gravidity, family income, educational status, past and present medical/medication history, lab investigation data, and a physician medication order sheet.

Daily reviews of the inpatient case files included checking for specifics including dosage, frequency, route, form, and how the medication was administered in accordance with prescriptions.

The pregnancy category and length of therapy were also evaluated for the prescriptions. The prescription was examined for accuracy in drug use and benefits using a number of sources. Interventions were carried out as needed if any drug-related issues such as drug interactions, adverse drug reactions, dose changes, or medication errors were noticed.

The average number of drugs prescribed per prescription, the percentage of drugs prescribed by generic names, the percentage of prescribed injections, the percentage of drugs prescribed from the essential drug list/formulary, and the percentage of prescribed injections were among the WHO core prescribing indicators used in the study. The gathered data was submitted to an appropriate statistical Technique.

RESULTS AND DISCUSSION

Table 1: Age distribution of patient population

Age group	Frequency(N)	Percentage (%)
15-20	32	22.6%
21-25	84	56%
26-30	33	20.8%
31-35	1	0.6%
Total	150	100%

The majority of the pregnancy women among 150 subjects were under the age group of 21-25.

Table 2: Level of gravida of patient population

Gravid	Frequency (N)	Percentage (%)
Primigravida	69	46%
Secondary gravida	47	31.3%
Multi gravida	34	22.6%
Total	150	100%

Majority of the level of gravida is followed by primary gravid 69 (46%) and secondary gravida 47 (31.3%). Outcomes The coprimary outcome was the assessment of the rotavirus IgA corresponded to Rotate and Rotarix. Rotavirus IgA corresponded was measured in two ways: rotavirus IgA sera conversion and rotavirus IgA titres or geometric mean titres. Rotavirus IgA seropositivity was defined as a titre of 40 or more. Rotavirus IgA seroconversion was defined as IgA seropositivity (titre ≥ 40) in the subsequent sample if seronegative (titre < 40) at age 6 weeks or a four-fold or greater increase in rotavirus IgA titre in the subsequent sample if rotavirus IgA seropositive (titre ≥ 40) at age 6 weeks. The geometric mean titres (GMT) were defined as the exponential of mean

logarithmic transformation of the rotavirus IgA titres and IgG titres. Rotavirus IgA seroresponse was measured at three time points for the RotaTeq arm at ages

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Table 3: Stage of pregnancy of patient population

Trimester	Frequency (N)	Percentage (%)
1st trimester	13	8.6%
2nd trimester	25	16.6%
3rd trimester	112	74.6%
Total	150	100%

Among 150 pregnant women, 112 subjects (74.6%) were hospitalized during the third trimester, where as 25 subjects (16.6%) were in the second trimester and 13 subjects (8.6%) were hospitalized during the first trimester.

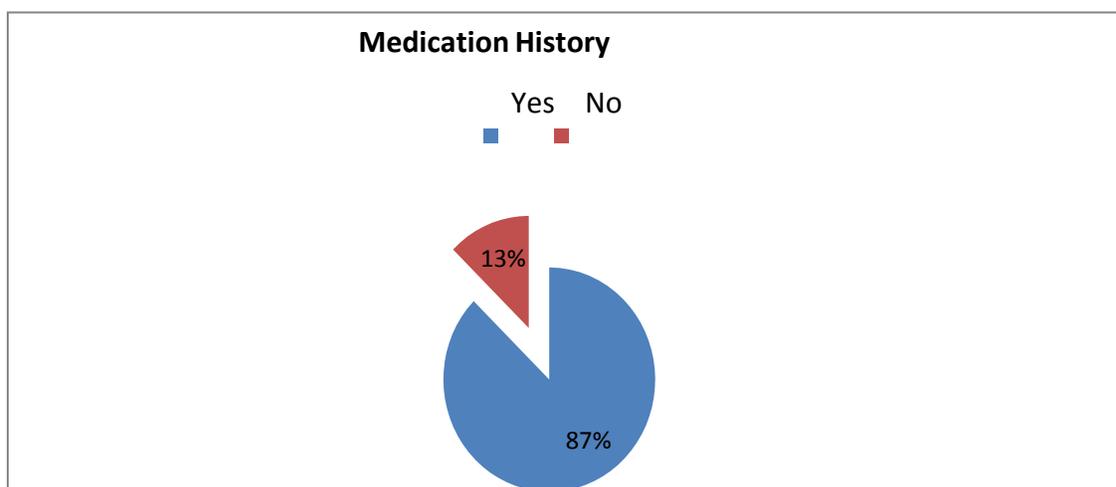


Figure 1: Medication history of patient population

Total 100% of Patients, 87% of them were having medication history, and 13% of them were lacking of medication history.

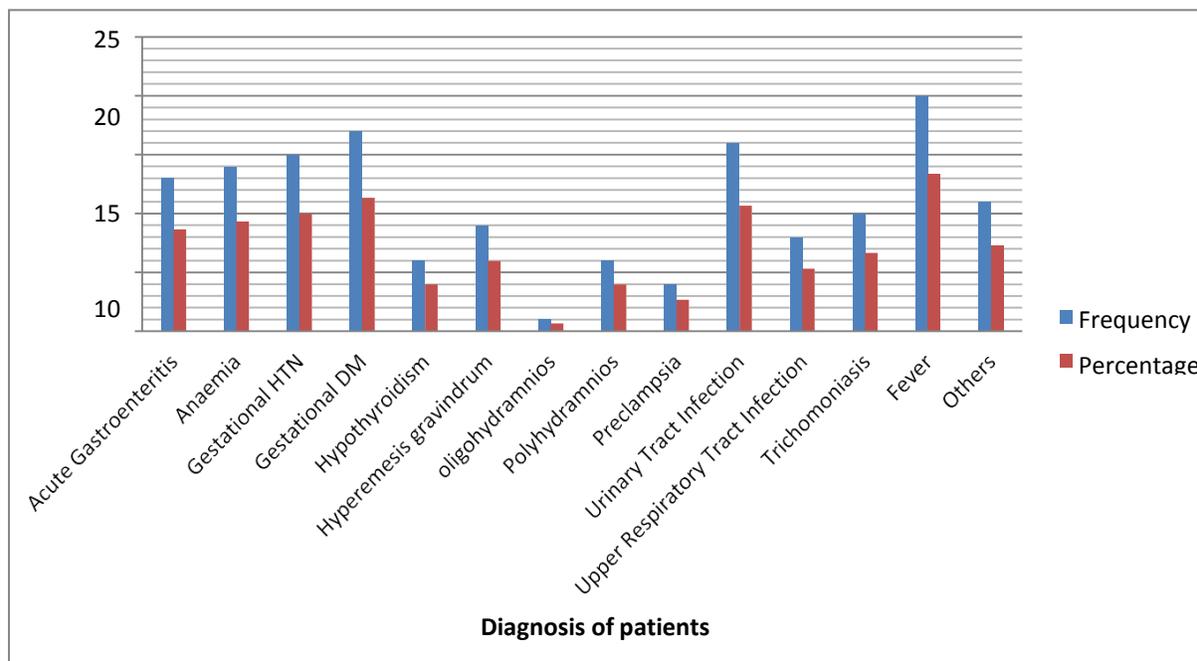


Figure 2: Diagnosis details of patient population

The most of patients were diagnosed with fever followed by gestational diabetes mellitus, urinary tract infection, gestational hypertension, anemia, acute gastroenteritis, trichomoniasis, hyperemesis gravidrum, upper respiratory tract infection, hypothyroidism, polyhydramnios, preclampsia and oligohydramnios.

Table 4: WHO drug use prescription indicators

WHO prescribing indicators	Values
Total number of drugs prescribed	574
Average number of drugs/prescription	3.82
% of drugs prescribed by generic name	6.2%
% of injections prescribed	18.8%
% of drugs prescribed from hospital formulary.	92.1%
% of antibiotics prescribed	16.2%

Table 5: Poly-pharmacy in prescription

No of drugs perprescription	Frequency (N)	Percentage (%)
1	0	0%
2	30	20%
3	39	26%
4	42	28%
5	21	14%
6	8	5.33%
7	8	5.33%
9	2	1.33%

According to above data most of the prescriptions contain 4 drugs (28%) and 3 drugs (26%).

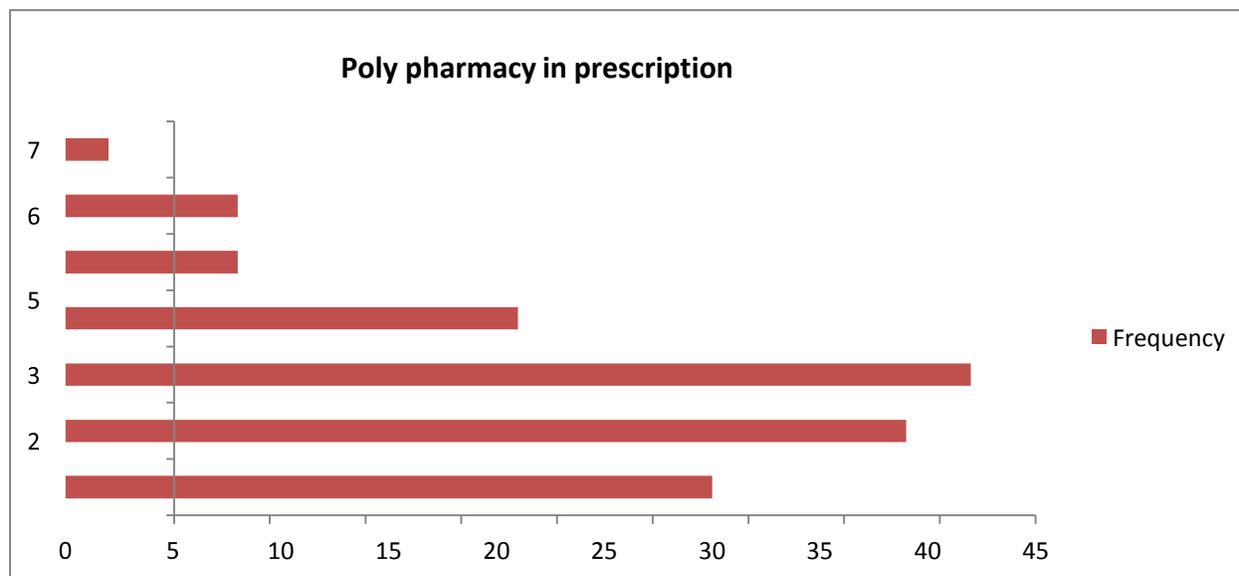


Figure 3: Poly-pharmacy in prescriptions

Table 6: Classification of drugs

Classification of drugs	Frequency of drugs(N)	Percentage (%)
Antiemetic	21	3.65%
Antihypertensive	33	5.74%
Calcium supplement	100	17.42%
Hormonal preparation	30	5.22%
Iron	91	15.853%
Thyroid	8	1.393%
Vitamin supplements	30	5.226%
Analgesic/antipyretic	18	3.135%
Antidiabetics	8	1.39%
Antidiarrheal	9	1.56%
Antianaemic	7	1.21%
Antiprotozoal	18	3.15%
Antiulcer	47	8.18%
Antiasthmatic	7	1.21%
Antibiotics	105	18.29%
Antiparkinsonism	1	0.17%
Laxatives	3	0.52%
Urinary alkalizer	25	4.35%
Anthelmintic	6	1.04%
Antitussive	1	0.17%
Cough and cold preparation	4	0.69%
Total	574	100%

Among the 574 drugs prescribed, 105 (18.2%) drugs are Antibiotics followed by calcium supplement about 100 (17.4%), followed by iron preparations 91 (15.8%) and anti-ulcer drugs 47 (8.1%).

Table 7: Prescribed drugs based on pregnancy category of drugs

Classification of drugs	A	B	C	D	X	Not certain/Unmentioned
Anti-emetics	6	15	0	0	0	0
Antihypertensive	1	10	22	0	0	0
Calcium supplement	0	3	92	0	0	0
Hormonal preparation	1	20	9	0	0	0
Iron	9	5	77	0	0	0
Thyroid	8	0	0	0	0	0
Vitamin supplements	26	0	4	0	0	0
Analgesic/antipyretics	0	16	2	0	0	0
Anti-diabetic	4	8	0	0	0	0
Antidiarrheal	0	9	0	0	0	0
Anti-anemic	0	2	0	5	0	0
Antiprotozoal	0	14	4	0	0	0
Anti-ulcer	2	46	1	0	0	0
Anti-asthmatic	0	2	5	0	0	0
Antibiotics	0	93	12	0	0	0
Anti-parkinsonism	0	1	0	0	0	0
Laxative	0	1	0	2	0	0
Urinary Alkalizer	0	1	24	0	0	0
Anti-helminthic	1	3	3	0	0	0
Anti-jussive	0	0	1	0	0	0
Cough and Cold preparation	1	1	2	2	0	0
Total	59	250	262	9	0	0

Among the prescribed drugs, majority of the drugs were under the Category C (262 drugs), followed by Category B (250 drugs) followed by category A (59 drugs). The category A contains more number of Calcium supplements (250 drugs) and Iron preparations (78 drugs). Whereas Category B contain Antibiotics (93 drugs) and Anti-ulcer drugs (46 drugs). More number of Vitamin supplements (26 drugs) present in Category A.

SUMMARY

Given that pregnancy is seen as a physiological process, specific consideration is needed. Women who are pregnant frequently have one or more pathological conditions that need for urgent medical care. Drug administration during pregnancy must be done with caution because there is a potential that it could harm both mother and the Foetus. Therefore, it is important to conduct a drug prescribing analysis among pregnant woman in order to assess prescribing practicing and also to give the medical professionals the feedback they need to improve their prescribing practices. This will demonstrate the medical professional capacity to distinguish between the various drugs options and choose the once that will be benefit their patients the most. The study being done describes the degree to which medical practioners can use clinical judgment to better the health of both the mother and the foetus. A comprehensive strategy to asses drug knowledge among

pregnant women using a questionnaire revealed that the majority of the respondents to the medications recommended and had full knowledge of the medications from either the doctor or the pharmacy. A Prescribing pattern analysis is always necessary to stay current on new prescribing trends, to improve patient care and to inform and counsel the pregnant women about the benefits and drawbacks of the medications.

CONCLUSION

Drug prescribing research is continuously used to identify and correct any instances of illogical drug prescription. All through this hospital is located in rural areas, the majority of pregnant women who visited the ANC completed their secondary education, but the majority of the subjects were unemployed. A prospective and observational study was conducted on 150 pregnant subjects who demonstrated rationality in the majority of the cases. The monthly income of pregnant women ranged from 10,000 to 30,000 dollars, yet they lead typical lives. The education they received is seen to be the main factor in the majority of the subjects normal BMIs and overall health. During the third trimester and with primigravity, the majority of the subjects were admitted. All of the subjects had conditions that required on going or intermittent care (such as fever, diabetes and hypertension, for example). Because the prescribing pattern needed to be assessed as the part of the study, WHO indicators were used, which comprised about six parameters. Vitamins and minerals were the next most commonly recommended drugs after antibiotics. Clarifying the proportion of infections observed in the pregnant population as well as the fact that the majority of the medication supplied fell under category C, which means that safe medications were prescribed during pregnancy at this hospital. The individuals were given the questionnaires that were being developed to help evaluate their attitudes and believes toward the medication, including their knowledge of the medications and any potential risks associated with them. The study's findings suggest that further steps must be made on a big scale to assess prescribing practices and ensure medication adherence among the pregnant population in order to guarantee the health of both mother and the foetus.

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