



## A STUDY TO EVALUATE PRESCRIBING PATTERN OF DRUG USE IN PREGNANT WOMEN

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Article Received on  
03 Nov. 2018,

Revised on 24 Nov. 2018,  
Accepted on 14 Dec. 2018,  
DOI: 10.20959/wjpps20191-12130

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### ABSTRACT

**Introduction:** Gynecology is a branch of medicine that specializes in the treatment of women - specifically. Virtually every woman will suffer with a gynecological condition at some point of her life. For most, it will be minor and easily treatable, but for others their condition may have devastating consequences. so there is a major need of knowing the managing patterns for these conditions. **Objective:** To assess the incidence of women disorders/disease, prescription pattern of out patients. **Materials And Methods:** This study was prospective and

observational study, conducted in a tertiary care hospital narsaraopet carried out for 6 months. Total number of enrollment in this study are 150 OP. **Results and discussion:** Pregnant: 150 Total number of drugs prescribed are 45 in them 8 drugs(17.7%) are in A category, 21 drugs(46.6%) in B-category, 9 drugs(20%) in C-category and 3 drugs(6.6%) in category D & 4 drugs(8.8%) in X category. Percentage of risk category drugs in the study, was seen of D & X category of 6.6% and 8.8%. **Conclusion:** In our study we can conclude that irrational use of drugs is prevailing among the pregnant women's because the prescribing indications were not within the standard ranges has been identified. All the health care practitioners should be aware of/ follow the standard prescribing patterns while treating the women disorders in order to provide the better quality of life.

**KEYWORDS:** Gynecology, Prevalence, Prescribing pattern.

## INTRODUCTION

Pregnancy needs utmost care in the management of both the mother and child. There are only a very few drugs available in pregnancy this is due to the lack of proper investigations in drug studies. Pregnancy is a special physiological condition where drug treatment presents a special concern.<sup>[1]</sup> Prescribing patterns of the drug in the pregnant women are the serious events which can have harmful effects to mother as well as fetus if administered. Also some drugs can interfere with functional development of organ systems and the central nervous system in the second and third trimester and produce consequences. Prescribing patterns of the drug in the pregnant women includes Age, Co-morbidities, trimester, risk category, WHO core indicators. So, we sought to evaluate the prescribing patterns of drugs in out-patients of obstetrics and gynecology department, so that the economic burden and the quality of life can be improved of the pregnant women as well as child and to minimize the harmful effects of drugs in pregnant women.<sup>[2,3,4]</sup>

## MATERIALS AND METHODS

**Study Centre:** This observational study was carried out in tertiary care hospital, narsaraopet.

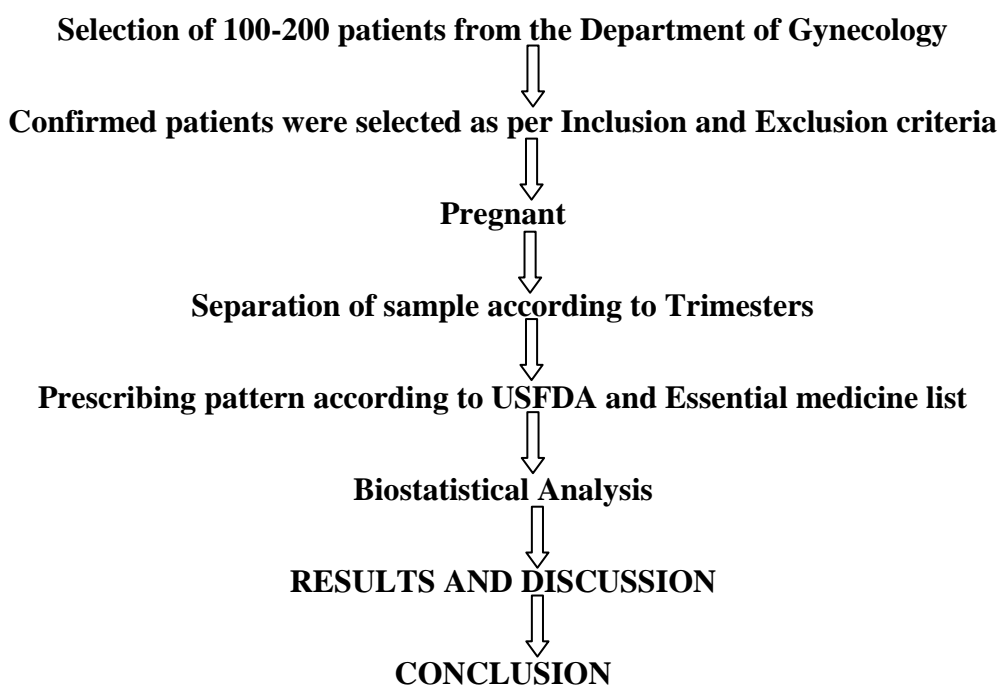
**Study Design:** This study was prospective and observational study.

**Study Duration:** This study was carried out for 6 months.

**Study Population:** Out-patients attending gynecology department of the hospital.

**Sample Size:** Total number of enrollment in this study are 150 OP.

## STUDY DESIGN



**Patient selection and procedures****Study Criteria****Inclusion Criteria**

- ❖ All the out patient women attending OPD above 18-45 years are included.
- ❖ Patients prescribed with at least one medication are included.
- ❖ Patient with co-morbidities, and non-hospitalized are included.
- ❖ Pregnant women who were willing to participate in the study.

**Exclusion Criteria**

- ❖ Patients with incomplete information.
- ❖ Out patients <18 and >45 are excluded from the study.
- ❖ Neonates, infants and lactating women are excluded.
- ❖ Pregnant women who were not willing to co-operate with the study.
- ❖ Patients with liver and kidney disorders are excluded.

**Tools**

- ❖ Patient data collection form
- ❖ Drug interaction form
- ❖ Patient informed consent form

**Study Procedure**

The visit was done at the Department of Obstetrics & Gynecology outpatient Department.

- ❖ Patient data was collected in the pre-designed data collection form
- ❖ The data collection form include demographics, patient history of disease & medication, medication from the prescription.
- ❖ Informed consent form was obtained from the patients.
- ❖ The patient's prescription was analyzed and drugs were categorized according to the US FDA drug risk category. The percentage of the risk category drugs was analyzed and categorized according to trimesters(pregnant women)

**Statistical Analysis**

- ❖ Statistical Analysis was performed by using MS Excel, and the results were statistically analyzed.

### WHO drug prescribing indicators data were analyzed for

- I. Average number of drugs per encounter.
- II. Percentage of drugs prescribed by generic name.
- III. Percentage of encounters with an antibiotic prescribed.
- IV. Percentage of encounters with an injection prescribed.
- V. Percentage of drugs prescribed from essential drug list and formulary.

## RESULTS

### Epidemiology and drug prescribing in pregnant women(N=150)

A total of 150 out-patients (pregnant women) from the Department of Obstetrics & Gynecology were enrolled in this study. The study was conducted from August 2017 to January 2018.

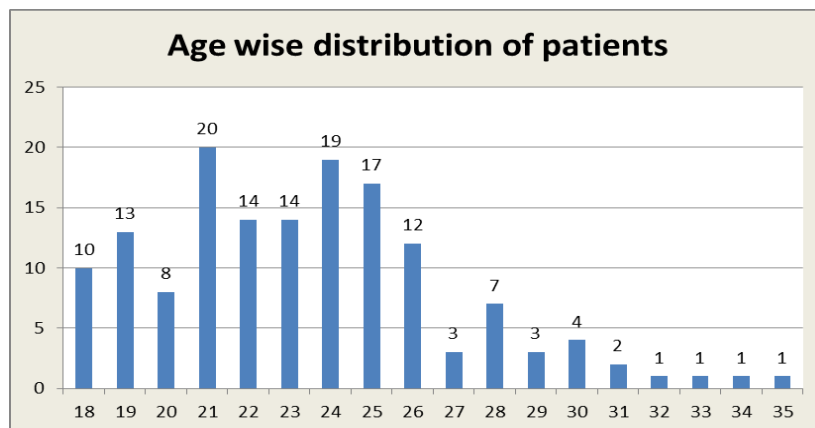


Chart 1: Age wise distribution in pregnant women.

### Trimester distribution

Out of 150 patients in the study they are distributed in different trimesters among them third trimester were 62(41.33%) and second trimester 52(34.66%) first trimester were 36(24%).

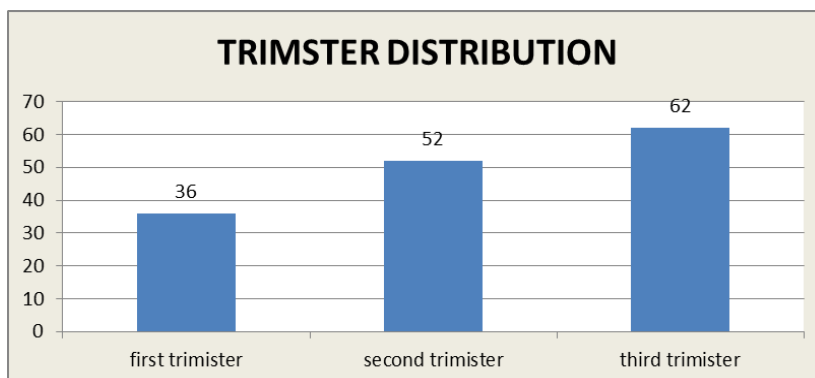
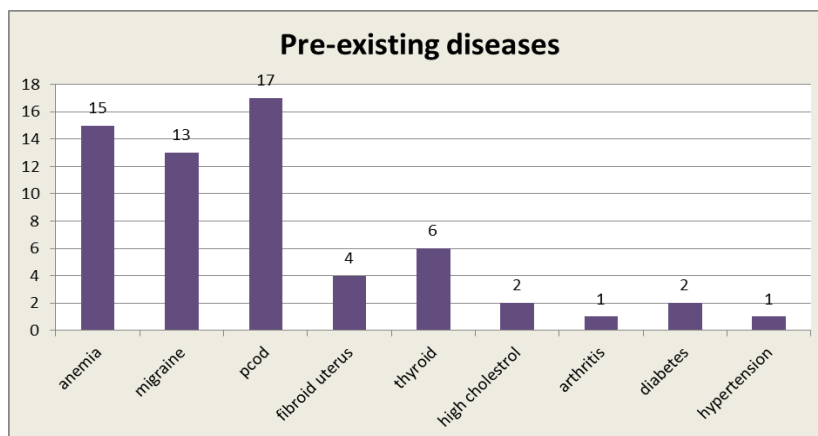


Chart 2: Age distribution in pregnant women.

### Pre-existing disease conditions

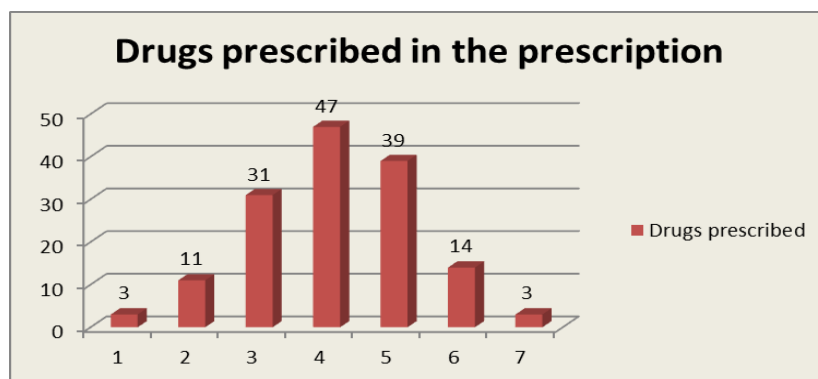
Out of the 150 patients, 61(40.66%) patients were having at least one pre existing condition while 89 (59.3%) patients were admitted on the basis of fresh complaint. Pre-existing conditions of patients as shown in the table below.



**Chart 3: Pre existing diseases in pregnant women.**

### Number of drugs prescribed per prescription

According to WHO guidelines only 4-5 drugs must be prescribed in pregnancy conditions. More than that can cause fetal effects in the new born's. Out of 150 prescriptions the number of drugs prescribed for prescription are as follows –mostly in 47(37.6%) prescriptions the no of drugs prescribed are 4. As per the guidelines, 47(37.6%) pregnancy womens out of 150 minimum no of drugs prescribed in them are four.



**Chart 4: Drugs prescribed in the prescription.**

### List of Drugs Prescribed In Out-Patients In Pregnant Women

In this study, Total number of drugs prescribed are 45. Among them 8 drugs are in A-category, 21 drugs in B-category, 9 drugs in C-category and 3 drugs in category D & 4 drugs in X category.

### Drugs Prescribed According To Us-Fda Category

Drugs prescribed in out-patients in pregnant women classified according to US FDA drugs.

DRUGS PRESCRIBED ACCORDING TO US-FDA CATEGORY.

**Table 1: Drugs prescribed according to US-FDA in pregnant women.**

US FDA drugs Pregnancy category	No. of drugs prescribed	Percentage (%)
<b>A</b>	8	17.7
<b>B</b>	21	46.6
<b>C</b>	9	20
<b>D</b>	3	6.6
<b>X</b>	4	8.8
<b>Total no of drugs prescribed</b>	45	100%

**Table 2: Types of drugs prescribed according to US-FDA in pregnant women.**

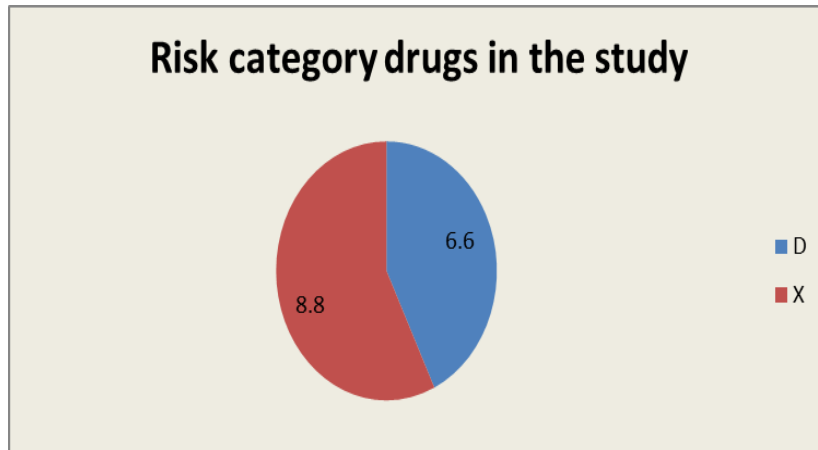
Category A	Category B	Category C	Category D	Category X
Syp heam up	Rabeprazole	Vitamins	Ecospirin	Progesterone
Folic acid	Ondansetron	Cholecalceferol	Diclofenac	Highly purified chronic gonadotrophin
Iron	Ferrous ascorbate	Calcium	Magnesium bisglycinate	Estradiol valerate
Protein powder	Cefuroxime	Zinc sulfate		Oxytocin
Calcium	Ranitidine	Promethazine		
Thyroxine sodium	Clarithromycin	Labetalol		
Doxylamine	Magnesium hydroxide	Chlorothymol		
Folate	L-arginine	Phenylephrine		
	L-carnitine	Fluconazole		
	parcetamol			
	Enoxaparin			
	Cefpodoxime			
	erythromycin			
	Ursedeoxycholic acid			
	Ceftriaxone			
	Betahistine			
	Metoclopramide			
	Levocitrazine			
	Chlorphenaramilne maleate			
	Clindamycin			
	Cabergoline			

### RISK CATEGORY DRUGS IN THE STUDY

Out of 150 study patients included in the study, Percentage of risk category drugs in the study was seen of D & X category of 6.6% and 8.8%. Percentage of risk category drugs in the study as shown in the table below.

**Table 3: Risk category drugs in the study.**

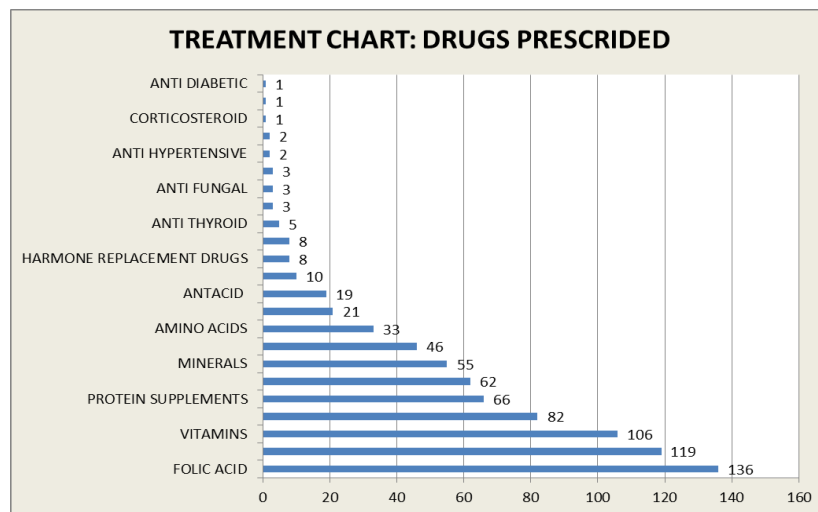
Category	Percentage(%)
D	6.6
X	8.8



**Chart 5: Risk category drugs in the study.**

**Prescribed Drugs In The Study**

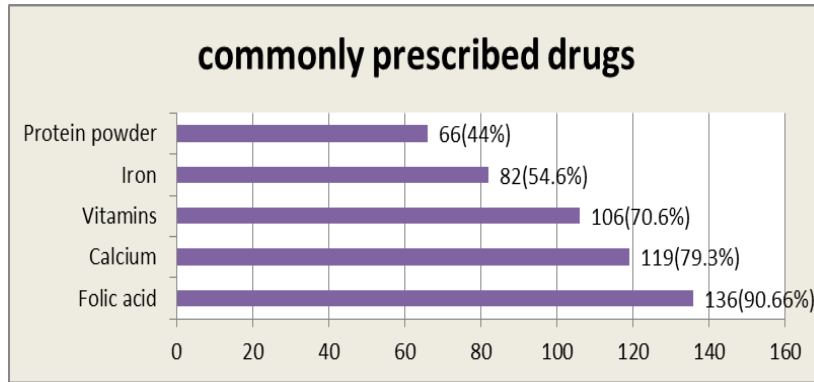
Prescribed drugs in the study were mostly folic acid (136) followed by Calcium (119), Vitamins (106), iron(82), protein powder(66). Commonly prescribed drugs in the study as shown in the table below.



**Chart 6: Treatment chart in pregnant women.**

**Commonly Prescribed Drugs In The Study**

Commonly prescribed drugs in the study were mostly prescribed folic acid 136 (90.66%) followed by Calcium 119 (79.3%), vitamins 106 (70.6%), iron 82 (54.6%), protein powder 66 (44%). Commonly prescribed drugs in the study as shown in the table below.



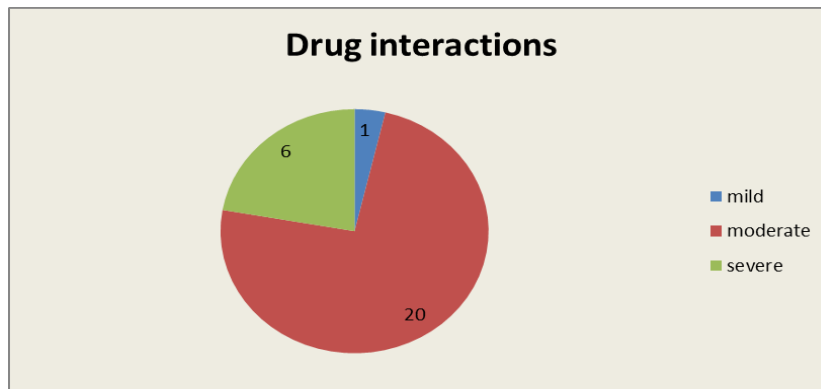
**Chart 7: Commonly prescribed drugs in pregnant.**

**Drug interactions**

Out of the study of 150 pregnant women 27 has shown drug drug interactions. Among them mild (1) moderate(20) and severe(6). this is shown in the figure below.

**Table 4: Drug interactions in the study.**

Drug interaction	No of women
Mild	1
Moderate	20
severe	6



**Chart 8: Drug interactions in the study.**

**EVALUATION OF DRUGS BASED ON WHO PRESCRIBING INDICATORS (pregnant women)**

❖ Average number of drugs per encounter = total number of drugs prescribed / total number of encounters surveyed.

Total no. Of drugs prescribed=45

Total number of encounters surveyed=150

Average number of drugs per encounter=0.3



- ❖ Percentage of drugs prescribed by generic name = (number of drugs prescribed by generic name / total number of drugs prescribed) \* 100.

Number of drugs prescribed by generic name=10

Total number of drugs prescribed=45

Percentage of drugs prescribed by generic name=22.22

- ❖ Percentage of encounters with an antibiotic prescribed = (number of patient encounters during which an antibiotic was prescribed / total number of encounters surveyed) \* 100.

Number of patient encounters during which an antibiotic was prescribed=15

Total number of encounters surveyed=150

Percentage of encounters with an antibiotic prescribed=10

- ❖ Percentage of encounters with an injection prescribed = (number of patient encounters during which an injection was prescribed / total number of encounters surveyed) \* 100.

Number of patient encounters during which an injection was prescribed=27

Total number of encounters surveyed=150

Percentage of encounters with an injection prescribed=18

- ❖ Percentage of drugs prescribed from essential drugs list = (number of drugs prescribed from essential drugs list / total number of prescribed drugs) \* 100.

Number of drugs prescribed from essential drugs list=22

Total number of prescribed drugs=45

Percentage of drugs prescribed from essential drugs list=48.88

## DISCUSSION

Pregnant individuals are divided based upon trimesters and pre-existing diseases are considered. Increased care should be taken while prescribing the drugs to pregnant because that might show fetal affects on the babies. Poly pharmacy is not recommended. So in our study an overview of drugs prescribed in various trimesters were discussed and relatively compared the outcome of the study with the WHO (national list of essential medicine) core prescribing indicators.

In this sample pregnant are 150 (third trimester were 62(41.33%) and second trimester 52(34.66%) first trimester were 36(24%). Non pregnant were 123 individuals. The Majority of the patients (pregnant) were 20(14%)) belong to an age group of 21 years. About 61(40.66%) patients were having at least one pre existing condition women were found to have co-morbidities like anemia15(10%), migraine 13(8.6%) pcod 17(11.3) and fibroid

uterus 4(2.6), while 89 (59.3%) patients were admitted on the basis of fresh complaint. Pregnant women were found to have co-morbidities like anemia 15(10%), migraine 13(8.6%) pcod 17(11.3%) and fibroid uterus 4(2.6%).<sup>[5,6]</sup> Total number of drugs prescribed are 45. Among them 8 drugs (17.7%) are in A-category, 21 drugs(46.6%) in B-category, 9 drugs(20%) in C-category and 3 drugs(6.6%) in category D & 4 drugs(8.8%) in X category.<sup>[7]</sup> Commonly prescribed drugs in the study were mostly prescribed folic acid 136 (90.66%) followed by Calcium 119(79.3%), vitamins 106(70.6%), iron 82(54.6%), protein powder 66 (44%).<sup>[10]</sup> Percentage of risk category drugs in the study, was seen of D & X category of 6.6% and 8.8%. WHO core drug indicators were seen in out of 150 pregnant women were studied in which average number of drugs per prescription =0.3, (range 1.6-1.8) percentage of drugs prescribed by generic name=22.2, (range 100%) percentage of encounters with antibiotic prescribed=10(range 20.0-26.8%), percentage of encounters with an injection prescribed=18 (range 13.4%-24.1%), percentage of drugs prescribed from essential drug list=48.8(range 100%).<sup>[8,9]</sup> 27 pregnant women has shown drug-drug interactions. Among them mild (1) moderate (20) and severe(6). In the study exercise is being analyzed in all the patients and around 20% individuals were under regular exercise.

## CONCLUSION

In our study we can conclude that irrational use of drugs is prevailing among the pregnant women's because the prescribing indications were not within the standard ranges has been identified. All the health care practitioners should be aware of/ follow the standard prescribing patterns while treating the women disorders in order to provide the better quality of life.

## ACKNOWLEDGEMENT

Sincere gratitude to our college (mederametla anjamma masthanrao college of pharmacy) for their timely guidance.

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