

## Research Article

# A STUDY ON PRESCRIBING PATTERNS OF DRUGS IN PREGNANT WOMEN ATTENDING A TEACHING HOSPITAL

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### ABSTRACT

The study was a prospective and observational carried out over a period of 6 months among out-patients of the obstetrics and gynecology department. The objective is to categorize the drugs according to the US-FDA drug risk category and trimesters, analyze drugs for WHO prescribing indicators, percentage of the risk category drugs in the out-patients in obstetrics and Gynecology Department in Dr. B.R. Ambedkar Medical College and Hospital, tertiary care teaching in Bangalore. A total 150 patients were enrolled in the study. Out of this the most number of patients were in the age group of 22 (21, 14%). About 8 (5.33%) were found have the co-morbidity of hypothyroidism and followed by chronic bronchitis 2 (1.33%). About pregnant women of 80 (53.33%) of third trimester are mostly seen and followed by pregnant women of 46 (30.66%) of second trimester and pregnant women of 24 (16%) of first trimester. Gravida condition of pregnant women were seen as Multi-Gravida of pregnant women 90 (60%) and followed by prime-Gravida of pregnant women 60 (40%). US-FDA drugs pregnancy category were seen in mostly in the pregnant women of 22 (43.13%) of risk category B and followed by pregnant women of 14 (27.45%) of C category, pregnant women of 11 (21.56%) A category, pregnant women of D & X category 2 (3.92%). Commonly prescribed drugs in the study were mostly prescribed folic acid (96.66%) followed by Iron capsule (83.33%), calcium tablet (80%), T.T injection (79.33%), protein powder (41.33%). Percentage of risk category drugs in the study were seen of D & X category of 3.92%. Evaluation of drugs based on the WHO prescribing Indicators: average number of drugs per prescription = 0.34, percentage of drugs prescribed by generic name = 25.49, percentage of encounters with antibiotic prescribed = 9.33, percentage of encounters with an injection prescribed = 85.33, percentage of drugs prescribed from essential drug list = 41.1. This study, conducted in out-patients in the department of obstetrics and gynecology in a tertiary care teaching hospital in Bangalore, shows that the majority of the pregnant women are age of 22 years. Drugs prescribing are a risk factor for harmful effects on fetus. These findings of this study are also in the same lines. This study shows that drug risk category were common in the prescriptions, which necessitates a change in the prescribing pattern interventions by clinical pharmacists can help reverse this trend. The study calls for an improvement in prescribing patterns.

**Keywords:** Risk Category of drugs, Gravida Condition, Co-morbidities, Trimester, WHO core indicators.

### INTRODUCTION

Pregnancy is 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, GTPAL, Co-morbidities, trimester, gravid condition, risk category, WHO core indicators. Most of the pregnant women were of the age group of 22 years. Therefore it is essential to prescribe the drugs and the effect on the pregnant women and fetus. 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</sup>.

#### LITERATURE REVIEW:

**Joshi H et al**, has conducted study on drug use patterns during pregnancy. The study was carried out in obstetrics and gynecology outpatient department of a tertiary care teaching hospital only the new cases of antenatal patients were included. Data were analyzed for demographic characteristics, drug use pattern. WHO core drug prescribing indicators data were also analyzed according to FDA (Food and Drug Administration, USA) drug risk category and trimester wise drug use pattern. Out of 734 women, 94% were 20-35 years of age. Common complaints were abdominal pain (13.8%), vomiting (12.4%), fever (9.5%) and others. Average number of drugs prescribed was 3.01 & 86% of women were prescribed 2 or more drugs. Iron preparations (78%) & calcium carbonate (77%) were the most frequently prescribed drugs followed by folic acid (46%) isoxuprine (24.4%) and others. Antibiotics were prescribed to 11.2%. The drugs belonging to essential drugs list were 59% & 22% of the drugs were prescribed by generic name, out of 2208 drugs prescribed, 77.5% were FDA drug risk category A, 12.6% category B, 9.1% category C and 0.7% category D<sup>3</sup>.

**Bakker M K et al**, has conducted study on prescription drug patterns before, during & after pregnancy. A cohort study was performed with data from the interaction data bases, containing prescription data form. The study population included 5412 women. The prescription rate was calculated as the number of women per 100 women who receive one or more prescription for a given drug within a specified time period, about 79.1% women received at least one prescription during pregnancy. The prescription rate for most drugs for chronic diseases and for occasional use decreased during pregnancy, whereas, as expected, the prescription rate for pregnancy-related drugs decreased. During the first trimester of pregnancy, 1.7% of all drugs prescribed for chronic conditions and 2.3% of the occasional drugs were classified as harmful<sup>4</sup>.

**Dileep K R et al**, has conducted study on drug-prescribing patterns during pregnancy in the tertiary care hospitals. This was a cross-sectional study conducted at five tertiary care hospitals. Copies of outpatient medicinal prescriptions given to pregnant patients attending the antenatal clinics were collected. A total of 3769 distinct prescriptions given to different women were collected. Majority of the women who received the prescriptions belonged to third trimester (55.4%) followed by second (33.6%) and first trimester (11.0%). On an average, each prescription contained  $1.66 \pm 0.14$  drugs. Less than one percent of the pregnant women attending tertiary care hospitals are prescribed teratogenic drugs<sup>5</sup>.

**Gawde S R et al**, has conducted study of drug Prescription Patterns in Pregnant Women Attending Antenatal Out Patient Department of a Tertiary Care Hospital. A cross sectional study was conducted by reviewing the antenatal care outpatient department case papers of 760 random pregnant women. The prescription pattern was assessed and the drugs were classified based on the US FDA Risk Classification. Out of 760 prescriptions, only 292 prescriptions had drugs other than iron, folic acid and calcium lactate. Of 292 prescriptions, 50 prescriptions had drugs belonging to category A (17.1%), 189 (64.7%) prescriptions had category B drugs, 45 (15.4%) prescriptions had category C drugs and 8 (2.7%) prescriptions had drugs belonging to category

D. Majority of the drugs (apart from iron, folic acid and calcium supplements) used during pregnancy were from category B, followed by category A and category C. Only 8 women were given category D drugs, which is certainly less as compared to the findings of the other studies. No woman was prescribed category X drug. All eligible pregnant women were provided with prophylactic iron and folic acid therapy<sup>6</sup>.

**Banda S R et al**, has conducted study on assessing the pattern of drug use among pregnant women and evaluating the impact of counselling on medication adherence among them. It was the prospective study conducted on 100 pregnant women to know the prescribing patterns. Prescriptions of the pregnant women containing at least one drug were analyzed and the drugs prescribed were classified according to pharmacological class. The pregnant women were divided according to their trimester and prescriptions were analyzed for different classes of drugs. Among 100 women enrolled in study 35% from first trimester, 61% from second trimester and remaining 4% from third trimester<sup>7</sup>.

**Fokaline V et al**, has conducted study on Drug utilization in pregnancy, prescribing of disease modifying anti-rheumatic drugs in the General Practice Research Database (GPRD). A Disease modifying anti-rheumatic drugs (DMARD) was prescribed just before or during 1100 pregnancies (814 deliveries, 286 terminations), mostly for malaria prophylaxis. Azathioprine, ciclosporin, (hydroxy)chloroquine and sulfasalazine were prescribed most often followed by methotrexate and leflunomide. Duration of exposure varied per product and pregnancy trimester. For most products, the frequency and duration of exposure increased in the second pregnancy trimester compared to the previous period<sup>8</sup>.

**Mohammed Adem et al**, has conducted study on medications use among pregnant women in Ethiopia. Medications were classified using the United States Food and Drug Administration pregnancy risk classification system. A total of 339 women were included in the study; of which 187 (55.2%) had used at least one prescription and 162(52.2%) had used over the counter medications during pregnancy. The majority of the medications were antibiotics (42.5%) and analgesics (40.1%). 57(16.8%) and 24(7.1%) of medications were prescribed from category D and X respectively. Out of 187 (55.2%) prescription medications used, 51 (15.0%) were obtained without prescribers order. Majority (70.8%) of the women did not have awareness regarding risks associated with self medication<sup>9</sup>.

**Meetu Agarwal et al**, has conducted study on prescribing pattern of drugs in the department of obstetrics & Gynaecology in expecting mothers in Jazan region, KSA. The average number of drugs per patient was found to be 3.30. The most frequently prescribed drugs were oral iron, folic acid preparations, antibiotics and analgesics. Within the prescriptions the percentage of the drugs according to the categories was: Category A (70.12%), Category B drugs (15.31%), Category C drugs (13.24%), Category D drugs (1.33%), and Category X drugs 0.00% (none). Most common antibiotic prescribed was Cefalexin. Most common antacid prescribed was Ranitidine hydrochloride<sup>10</sup>.

**Sivasakthi R et al**, has conducted study on assessment of pregnancy prescriptions in an ante-natal clinic. A Prospective cross- sectional study was carried out in order to assess the prescription pattern in pregnancy women. The study subjects were 200 pregnant women from ante natal clinic at coimbatore. The main outcome measures were calcium, iron, and folic acid are the main drug of choice. During pregnancy, either alone or in combination with other drugs. The majority of pregnancy women in urban were house wife 56 % ( n=112) & no one is from army, airforce, and smoking & alcohol. Folic acid is mostly prescribed in the pregnancy prescription 21 % ( n=42) and calcium & iron were prescribed in 21.5 % ( n=42) & 20 % (

n=40).The study resulted that prescriber must encouraged to adhere to standard guidelines like-FDA safety drugs for better ante-natal care<sup>11</sup>.

**Roland N et al**, has conducted study on evaluation of physicians prescribing patterns of antimalarial drugs during pregnancy at the obstetrics and gynaecology department of a teaching hospital in Maiduguri, Borno state, Nigeria. The mean maternal age obtained from this study was  $24.93 \pm 5.434$  years whereas the range was 14-42 years. The mean maternal age obtained from this study is similar to that obtained in a study conducted in Benin City, Nigeria. Multigravid women formed the majority of women that were prescribed with antimalarial drugs which is not consistent with the finding in Benin City, where primigravid women were the majority attending the ante-natal clinic. The high value obtained in multigravid women visitation indicates that they are aware of the importance of visiting ante-natal clinics during pregnancy, and that pregnancy at thirties can result in pre-eclampsia, premature birth and low birth weight baby, placental problems such as; placental previa in which the placenta covers part or all the opening of the cervix<sup>12</sup>.

**Priyanka S et al**, has conducted study on pattern of drug prescribing during pregnancy in Nepalese Women. The drugs that were prescribed during pregnancy were assessed retrospectively in 94 Nepalese pregnant women who attended the prenatal clinic of the two Hospitals in Nepal. From Patient medical record, FDA drug category of prescribed drugs was identified. Maximum number of pregnant women was from age grouping 15 to 25 (72%). According to FDA drug category, our finding reveals that two drugs prescribed of FDA category X were oxytocin and dydrogesterone. A majority of drugs prescribed were from category B (42%). A majority of drugs were given as oral dosage forms i.e. tablet form (56%) and in severe cases injection was preferred i.e. 24%. Anthelmintic was prescribed to all pregnant women during their second trimester. The most commonly prescribed drugs were nutritional supplements like Iron, Folate, Calcium, Vitamins followed by Tetanus Toxoid. The frequently prescribed drugs was from FDA category B (42%) and rest were C(30%), A (14%), D (4%), X (4%) and not categorized (4%) shown in table 4 and But the FDA category varies according to the dose use and in which trimester the drug is being used. Around 61% women were hospitalized during their pregnancy and rest 39% were not hospitalized during their pregnancy stage out of 94 pregnant women<sup>13</sup>.

**Puranik S.B. et al**, has conducted study on Safe Drugs during Pregnancy and Lactation. Pregnancy is the carrying of one or more offspring, known as a fetus or embryo, inside the womb of a female. Lactation describes the secretion of milk from the mammary glands, the process of providing milk to the young, and the period of time that a mother lactates to feed her young one. This process occurs in all female mammals, in humans it is commonly referred to as breastfeeding or nursing. This paper summarizes the factors determining fetal damage and lists the problems associated with some drugs frequently encountered during Pregnancy and Lactation<sup>14</sup>.

**Ravi Shankar**, carried out a study on drug utilization review, were 530 prescriptions were analyzed and the mean standard deviation of drugs per prescription was  $2.15+1.71$ . 67.4% of the drugs were prescribed by brand names and only 39.56% of the drugs prescribed were from WHO essential drug list. The frequency of prescribing of antiulcer drugs, antibiotics, antiasthma drugs, anti-hypertensive and analgesics were 24.15%, 23.96%, 20.56%, 19.81% and 15.09% respectively. The study revealed a lot of scope for educating the prescribers to improve the prescribing practices<sup>15</sup>.

*Prashant E Bhingare et al*, has conducted study on prescription pattern in Gynaecology in teaching hospital. During the study period the following results are analyzed. Most of the cases were in between the age group of 21 to 25 years 27 (54%) followed by 15 to 20 years of age 12 (24%) while least cases 1 (2%) were in the age group of 31 to 35 years. A total of 253 drugs were prescribed by the gynecologists to the 50 cases. Most preferred route of drug administration was intravenous route (143 drugs, 56.32%) followed by oral (84 drugs, 33.20%) and intramuscular (26 drugs, 10.28%) route. Antimicrobials were the most commonly prescribed drugs (48.22%) followed by vitamins and other supplements which out of all 253 drugs, 53.35% drugs were prescribed by trade name and in antimicrobial group 62.29% were branded drugs. Cases were managed by empirical treatment and culture and sensitivity was not done in antimicrobial recipients. Fixed dose combination was given to 2% patient in which iron and folic acid was used. Single antimicrobial therapy was given to 33.33% cases<sup>16</sup>.

**OBJECTIVE:**

Primary objective: - To study and evaluate the prescribing patterns of the drugs used during pregnancy in obstetrics and Gynecology Department at Dr. B.R Ambedkar Medical College & Hospital, at kadugondanahalli, Bangalore.

Secondary objective:-

- To categorize the drugs according to the US FDA drug risk category and trimesters.
- To analyze drugs for WHO Prescribing indicators.
- To find out the percentage of the risk category drugs

**MATERIALS AND METHODS:****Study Site:**

This study was conducted at Dr. B.R. Ambedkar hospital, Bangalore. Dr.B.R. Ambedkar hospital is a 550 bedded tertiary care teaching hospital providing health care services to all people. The different specialties of this hospital including departments like Gynaecology, Medicine, Surgery, Orthopedics, Physiotherapy, Radiology, Neurology, Dermatology, ENT, Forensic Medicine, Anesthesia, Urology, Pathology, Biochemistry and Microbiology.

**Study Centre:**

This observational study was carried out in Obstetrics & Gynecology outpatient Department of Dr. B.R. Ambedkar Medical College & Hospital.

**Study Design:**

This study was prospective and observational study.

**Study Duration:**

This study was carried out for 6 months with data collection for a period of 3 months.

**Study Population:**

Out-patients attending gynecology department of the hospital.

**Sample Size:**

Total number of enrollment: 175 patients

Number of drop-out: 25 patients

Number of patients included: 150

**Study Criteria:****Inclusion Criteria:**

- All the pregnant women attending OPD above 18 years.
- Patients prescribed with at least one medication.

- Pregnant women who were willing to participate in the study.

**Exclusion Criteria:**

- Patients provided incomplete information.
- Pregnant women who were not willing to co-operate with the study.
- Patients with liver and kidney disorders.

**Tools:**

- Patient data collection form
- Patient informed consent form

**Sources of Data:**

- Prescriptions of patients.
- Patient medication chart review.
- Lab report.

**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
- Informed consent form was obtained from the patients.
- The data include demographics, patient history of disease & medication, medication from the prescription.
- 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.

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.

**Statistical Analysis:**

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

**RESULTS & DISCUSSION:**

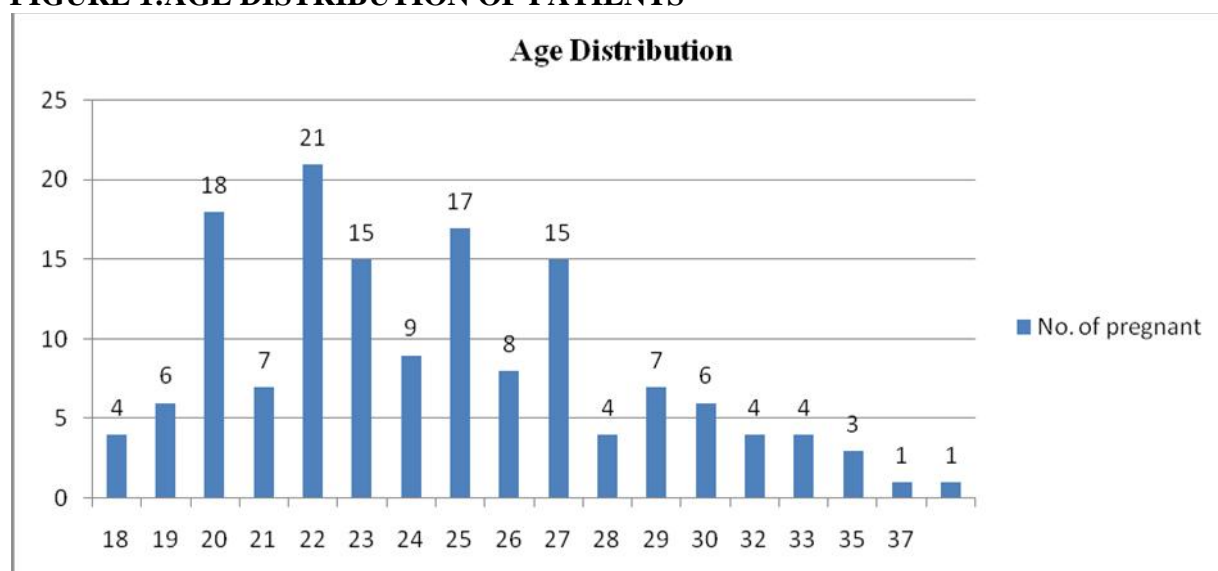
A total of 150 out-patients from the Department of Obstetrics & Gynecology were enrolled in this study. The study was conducted from January to June 2014 at Dr. B.R. Ambedkar Medical College and Hospital, a tertiary care teaching hospital in Bangalore.

**AGE DISTRIBUTION OF PATIENTS**

Out of 150 study patients included in the study, majority of patients, 21(14%) belonged to age group of 22 years. The age distribution as shown in the table below.

**TABLE 1: AGE DISTRIBUTION OF PATIENTS (N=150)**

Age in Years	Number of pregnant women	Percentage (%)
18	4	2.66
19	6	4.0
20	18	12
21	7	4.66
22	21	14
23	15	10
24	9	6.0
25	17	11.33
26	8	5.33
27	15	10
28	4	2.66
29	7	4.66
30	6	4.0
32	4	2.66
33	4	2.66
35	3	2.0
37	1	0.6
40	1	0.6
<b>Total No. of patient</b>	<b>150</b>	<b>100</b>

**FIGURE 1: AGE DISTRIBUTION OF PATIENTS****CO-MORBID CONDITIONS OF PATIENTS:**

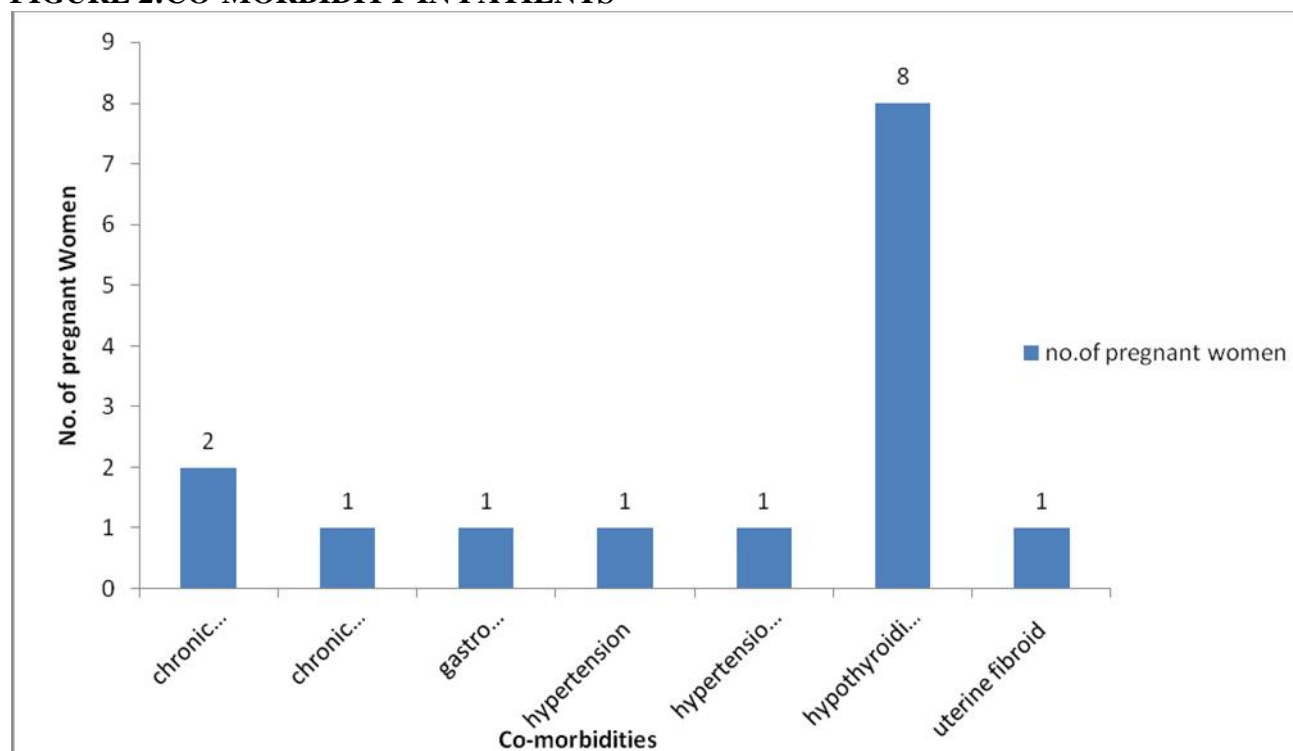
Out of the 150 patients enrolled in the study, 15(10%) patients were having at least one co-morbid condition while 135 (90%) patients were admitted on the basis of fresh complaint. Co-morbid conditions of patients as shown in the table below.

**TABLE 2.1: CO-MORBIDITIES IN PATIENTS (N=150)**

Comorbidities	No. of pregnant women	Percentage (%)
Chronic Bronchitis	2	1.33
Chronic Thyroiditis	1	0.6
Gastro Enteritis	1	0.6
Hypertension	1	0.6
Hypertension and Hypothyroidism	1	0.6
Hypothyroidism	8	5.33
Uterine Fibroid	1	0.6
No Comorbidities	135	90
<b>Total no.of pregnant</b>	<b>150</b>	<b>100</b>

**TABLE 2.2: CO-MORBIDITIES IN PATIENTS (N=150)**

Co-morbidity	Number of pregnant	Percentage (%)
Yes	15	10
No	135	90
<b>Total number of patient</b>	<b>150</b>	<b>100</b>

**FIGURE 2: CO-MORBIDITY IN PATIENTS**

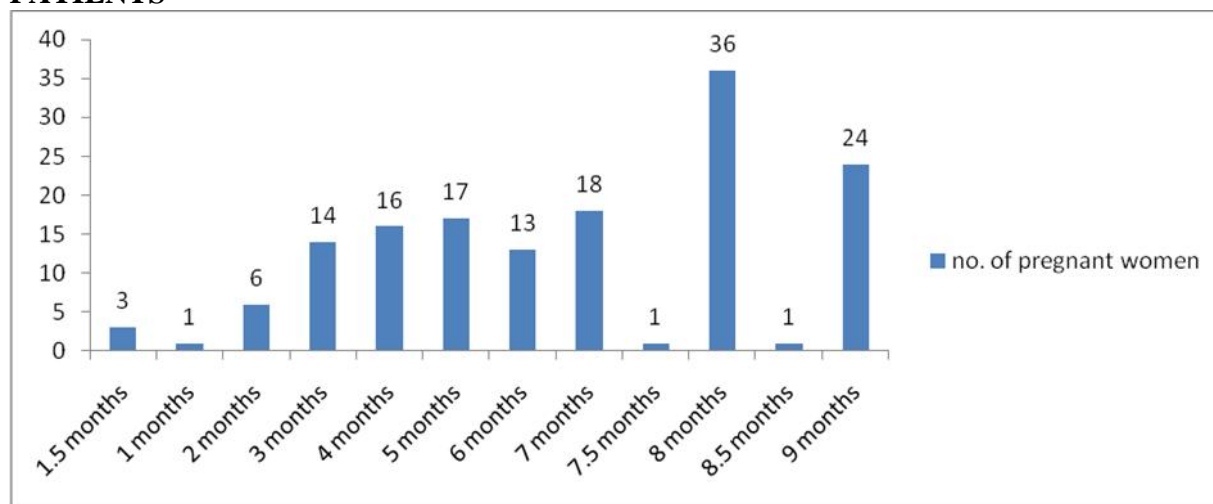


**TRIMESTER DISTRIBUTION OF PATIENTS:**

Out of 150 study patients included in the study majority of patients, 36(24%) belonged to trimester of 8 months. Trimester distribution is shown in the table below.

**TABLE 3.1: TRIMESTER DISTRIBUTION OF PATIENT (N=150)**

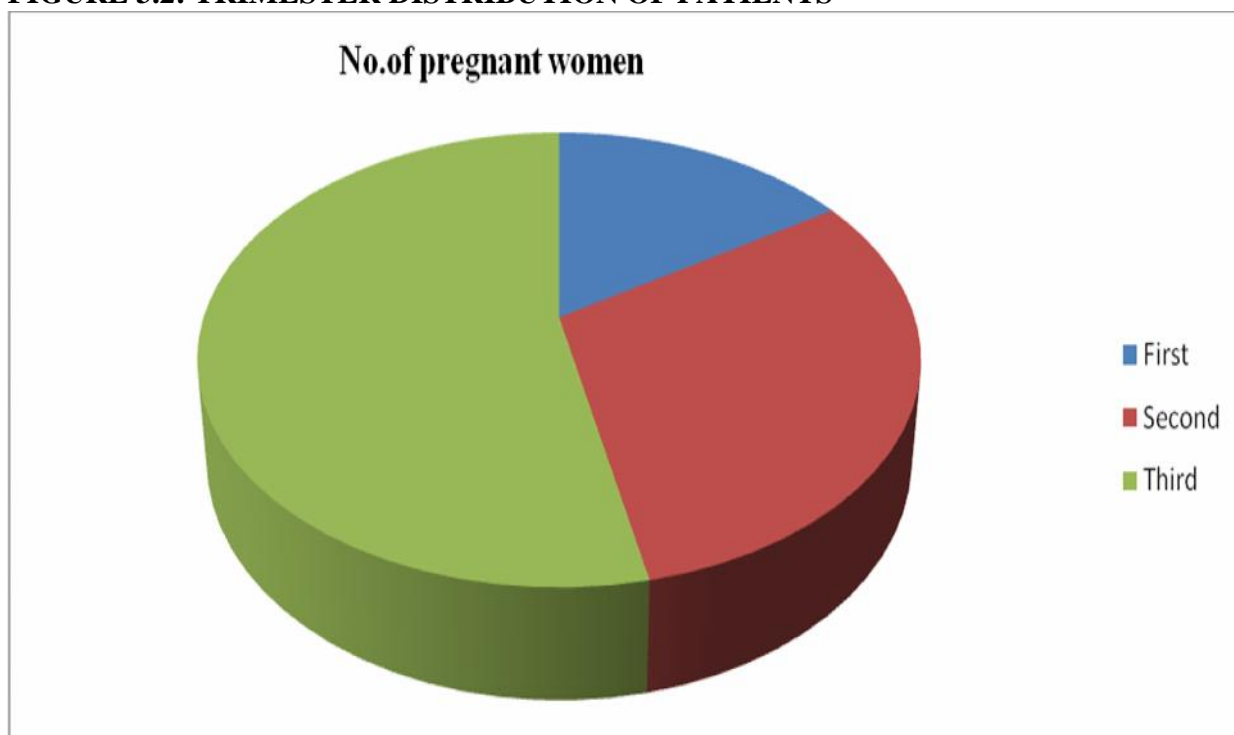
Trimester	No. of pregnant women	Percentage (%)
1month	1	0.6
1.5months	3	2.0
2months	6	4.0
3months	14	9.33
4months	16	10.66
5months	17	11.33
6months	13	8.66
7months	18	12.0
7.5months	1	0.6
8months	36	24
8.5months	1	0.6
9months	24	16
<b>Total no. of pregnant women</b>	<b>150</b>	<b>100</b>

**FIGURE 3.1: TRIMESTER DISTRIBUTION OF PATIENTS**

Out of 150 study patients included in the study majority of patients, 80(53.33%) belonged to Third-Trimester. Trimester distribution is shown in the table below.

**TABLE 3.2: TRIMESTER DISTRIBUTION OF PATIENTS (N=150)**

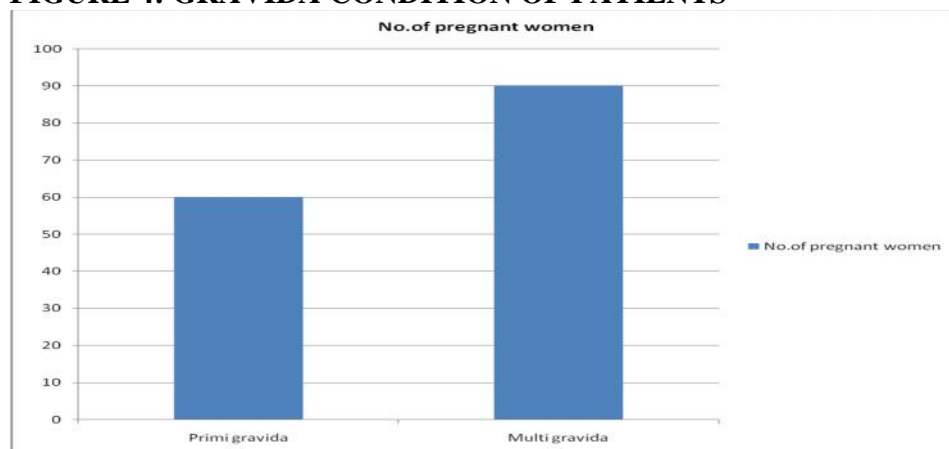
Trimester	No. of Pregnant women	Percentage (%)
1 <sup>st</sup>	24	16
2 <sup>nd</sup>	46	30.66
3 <sup>rd</sup>	80	53.33
<b>Total No. of pregnant women</b>	<b>150</b>	<b>100</b>

**FIGURE 3.2: TRIMESTER DISTRIBUTION OF PATIENTS****GRAVIDA CONDITION OF PATIENTS**

Out of 150 study patients included in the study, majority of patients, 90 (60%) belonged to Multi-Gravida. The Gravida condition as shown in the table below.

**TABLE 4: GRAVIDA CONDITION OF PATIENTS (N=150)**

Gravida	No. of pregnant women	Percentage (%)
Prime-Gravida	60	40
Multi-Gravida	90	60
<b>Total no. of pregnant women</b>	<b>150</b>	<b>100</b>

**FIGURE 4: GRAVIDA CONDITION OF PATIENTS**

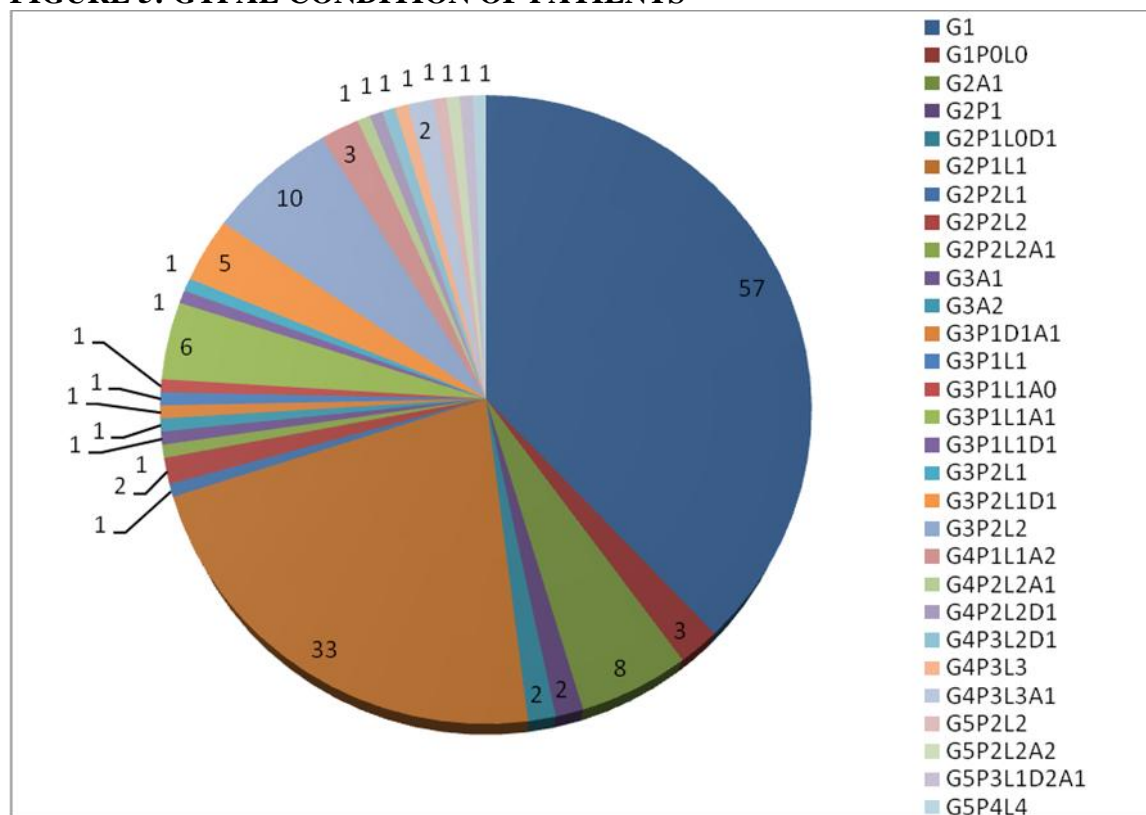
**GTPAL (G=NO. OF PREGNANCY, P=NO. OF DELIVERY, A=ABORTION, L=LIVE BIRTHS, D=DEAD) CONDITION OF PATIENTS**

Out of 150 study patients included in the study, majority of patients, 57 (38%) belonged to G1 (no. of pregnancy). The GTPAL condition as shown in the table below.

**TABLE 5: GTPAL CONDITION OF PATIENTS**

GTPAL	No. of pregnant women	Percentage (%)
G1	57	38
G1P0L0	3	2
G2A1	8	5.33
G2P1	2	1.33
G2P1L0D1	2	1.33
G2P1L1	33	22
G2P2L1	1	0.6
G2P2L2	2	1.33
G2P2L2A1	1	0.6
G3A1	1	0.6
G3A2	1	0.6
G3PID1A1	1	0.6
G3P1L1	1	0.6
G3P1L1A0	1	0.6
G3P1L1A1	6	4
G3P1L1D1	1	0.6
G3P2L1	1	0.6
G3P2L1D1	5	3.33
G3P2L1	10	6.66
G4P1L1A2	3	2
G4P2L2A1	1	0.6
G4P2L2D1	1	0.6
G4P3L2D1	1	0.6
G4P3L3	1	0.6
G4P3L3A1	2	1.33
G5P2L2	1	0.6
G5P2L2A2	1	0.6
G5P3L1D2A1	1	0.6
G5P4L4	1	0.6
<b>Total no. of pregnant women</b>	<b>150</b>	<b>100</b>

FIGURE 5: GTPAL CONDITION OF PATIENTS



**DRUGS PRESCRIBED IN OUT-PATIENTS DEPARTMENT**

Out of 150 study patients included in the study. Total number of drugs prescribed are 51. Among them 11 drugs are in A-category, 22 drugs in B-category, 14 drugs in C-category and 2 drugs in each D & X category. Drugs prescribed in out-patients in pregnant women as shown in table below.

**TABLE 6: LIST OF DRUGS PRESCRIBED IN OUT-PATIENTS IN PREGNANT WOMEN**

Category A	Category B	Category C	Category D	Category X
Syrup haem up	Paracetamol	Voline gel	Candid vaginal pessaries	Progesterone
Thyroxine sodium	Amoxicillin	Citralka	Ecosprin	Leuprolide acetate
Doxylamine succinate	Ranitidine	Methyl dopa		
Syrup ganison	Cefixime	Sporlac sachet		
Syrup calcimax forte	Benadryl	Glucose		
Syrup mucaine gel	Grilinctus	Ciprofloxacin		
Folic acid	L-carnitine	Nifedipine		
Iron capsule	L-arginine	Levofloxacin		
Protein powder	Calamine lotion	Anovate cream		
Calcium tablet	Metronidazole	Tab.pause MF		
T.T injection	Duphalac	Isosorbide mononitrate		
	Bricarex	Duolin		

	Terbinafine cream	Syp Zedex		
	Levocarnitine	Betnesol		
	Buscopan			
	Pantaprazole			
	Ambrolite-d			
	Omeprazole			
	Nitrofurantoin			
	Cyclopam			
	Sinarest			
	Ondansetron			

### DRUGS PRESCRIBED ACCORDING TO US-FDA CATEGORY

Drugs prescribed in out-patients in pregnant women classified according to US FDA drugs Pregnancy category: US-FDA drugs pregnancy category were seen in mostly in the pregnant women of 22 (43.13%) of risk category B and followed by pregnant women of 14 (27.45%) of C category, pregnant women of 11 (21.56%) A category, pregnant women of D & X category 2 (3.92%).US-FDA drugs category as shown in table below.

**TABLE 7:DRUGS PRESCRIBED ACCORDING TO US-FDA CATEGORY**

US FDA drugs Pregnancy category	No. of drugs prescribed	Percentage (%)
A	11	21.56
B	22	43.13
C	14	27.45
D	2	3.92
X	2	3.92
<b>Total no. of drugs prescribed</b>	<b>51</b>	<b>100</b>

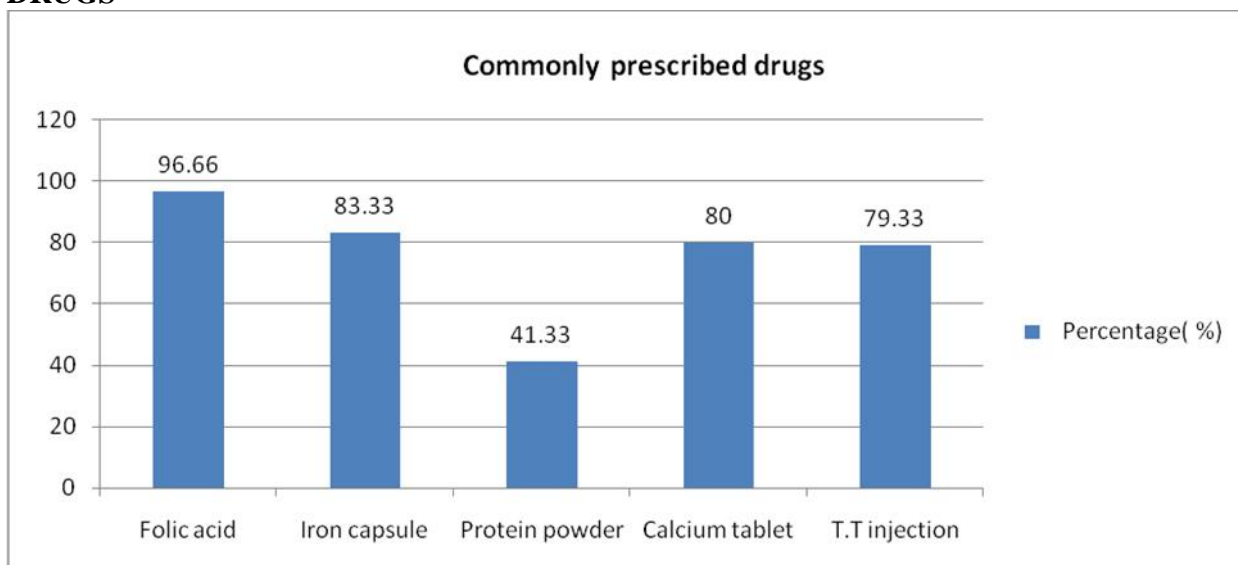
### COMMONLY PRESCRIBED DRUGS IN THE STUDY

Commonly prescribed drugs in the study were mostly prescribed folic acid (96.66%) followed by Iron capsule (83.33%) , calcium tablet (80%) , T.T injection (79.33%) , protein powder (41.33%).Commonly prescribed drugs in the study as shown in the table below.

**TABLE 8: COMMONLY PRESCRIBED DRUGS IN THE STUDY**

Drugs	No. of pregnant women	Percentage (%)
Folic acid	145	96.66
Iron capsule	125	83.33
Protein powder	62	41.33
Calcium tablet	120	80
T.T injection	119	79.33

**FIGURE 6: COMMONLY PRESCRIBED DRUGS**



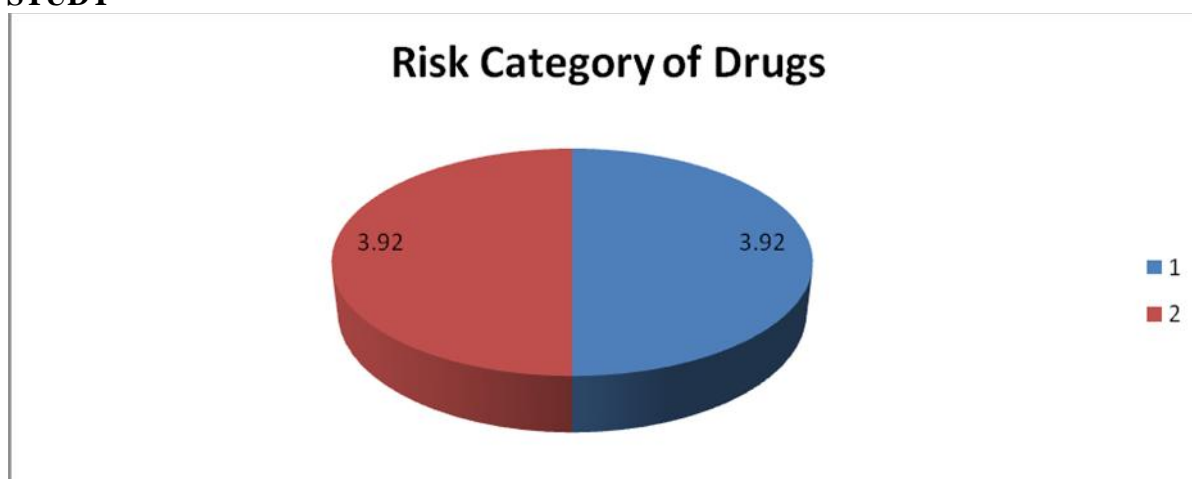
**RISK CATEGORY DRUGS IN THE STUDY**

Out of 152 study patients included in the study, Percentage of risk category drugs in the study was seen of D & X category of 3.92%.Percentage of risk category drugs in the study as shown in the table below.

**TABLE 9: PERCENTAGE OF RISK CATEGORY DRUGS IN THE STUDY**

Category	Percentage (%)
D	3.92
X	3.92

**FIGURE 7: RISK CATEGORY DRUGS IN THE STUDY**



**EVALUATION OF DRUGS BASED ON WHO PRESCRIBING INDICATORS**

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

Total no. Of drugs prescribed=51

Total number of encounters surveyed=150

Average number of drugs per encounter=0.34

- ❖ 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=13

Total number of drugs prescribed=51

Percentage of drugs prescribed by generic name=25.49

- ❖ 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=14

Total number of encounters surveyed=150

Percentage of encounters with an antibiotic prescribed=9.33

- ❖ 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=128

Total number of encounters surveyed=150

Percentage of encounters with an injection prescribed=85.33

- ❖ 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=21

Total number of prescribed drugs=51

Percentage of drugs prescribed from essential drugs list=41.17

**TABLE 10: WHO CORE DRUG PRESCRIBING INDICATORS**

S.NO.	Indicator	Value
1	Average number of drugs per prescription	0.34
2	Percentage of drugs prescribed by generic name	25.49
3	Percentage of encounters with antibiotic prescribed	9.33
4	Percentage of encounters with an injection prescribed	85.33
5	Percentage of drugs prescribed from essential drug list	41.17

This study provides data on the Prescribing patterns of the drug in the pregnant women in Obstetrics & Gynecology wards of Dr. B.R. Ambedkar Medical College and hospital, in Bangalore. A total of 150 patients were enrolled based on inclusion and exclusion criteria. In the

study, US-FDA drug risk category out of the 150 patients included in the study majority (21 pregnant women, 14%) were in age group of 22 years followed by 18(12%) pregnant women in age group of 20 years and 17(11.33%) pregnant women belonged to age groups of 25 years, while the least number were in the range of 15(10%) having 23 & 27 years. In the present study, majority of the patients (21 pregnant women, 14%) were in age group of 22 years followed by 18(12%) pregnant women in age group of 20 years. This finding is similar to a prospective study conducted by **Banda shalini Reddy et al.** which observed that among in the 100 pregnant women, majority of 51 pregnant women, 51% were between the age group of 22-26 years of age and followed by the 29(29%) of pregnant women were between age group of 17-21 years. This finding indicates a majority of pregnant women of aged 22 years are involved. The present study includes 150 patients of which 15(10%) pregnant women were found to have comorbidities like Hypothyroidism, chronic bronchitis, chronic thyroiditis, Gastroenteritis, Hypertension, Hypertension and Hypothyroidism, uterine fibroid and other medical conditions. In the present study, Hypothyroidism was found in 8(5.33%) pregnant women followed by chronic bronchitis in 2(1.33%) pregnant women and 1(0.6%) of co-morbidities like Gastro-Enteritis, Uterine fibroid, HTN, Chronic Thyroiditis etc. In a study conducted by **Banda shalini Reddy et al.**, which observed that most number of pregnant women belongs to anemia 28 (28%), Hypertension 12 (12%) and 2 women were having both anemia and hypertension. Trimester distribution of patients were seen out of 150 pregnant women studied, which the most number of pregnant women belongs to third trimester 80 (53.33%) pregnant women, followed by second trimester 46 (30.66%), third trimester 24 (16%) pregnant. In a study conducted by **Priyanka et al.**, which observed that most number of pregnant women belongs to first trimester 52%, followed by third trimester 43% and second trimester 5%. Gravida condition of patients were seen out of 150 pregnant women studied, which the most number of pregnant women belongs to Multi-Gravida of pregnant women 90 (60%) and followed by prime-Gravida of pregnant women 60 (40%). A similar study was conducted by **Inamdar I.F. et al.**, in which Multi gravid of pregnant women 288 (57.6%) and followed by prime gravid of pregnant women 212 (42.4%). US-FDA drugs in pregnancy were seen in 150 patients were studied, in which the most US-FDA drugs category was B category number of drugs prescribed 22 (43.13%) followed by C category number of drugs prescribed 14 (27.45%), A category number of drugs prescribed 11(21.56%), category D & X number of drugs prescribed 2 (3.92%). The study conducted by the **priyanka et al.**, was similar which B category number of drugs prescribed 21 (42%), followed by C category number of drugs prescribed 15 (30%), A category number of drugs prescribed 7 (14%), D & X category number of drugs prescribed 2 (4%). Commonly prescribed drugs were seen in out of 150 pregnant women, in which the most commonly prescribed drug is Folic Acid number of pregnant women 145 (96.66%), followed by Iron capsule number of pregnant women 125 (83.33%), Calcium tablet number of pregnant women 120 (80%), T.T injection number of pregnant women 119 (79.33%), protein powder number of pregnant women 62 (41.33%). A similar study was conducted by Dileep K Rohra in which anti-anemic drugs including iron preparations and vitamins and minerals supplements (79.4%) were the most frequently prescribed drugs followed by analgesics (6.2%) and anti-bacterial (2.2%). Percentage of risk category drugs in the study of 150 pregnant women was seen of D & X category of 3.92%. WHO core drug indicators were seen in out of 150 pregnant women were studied in which average number of drugs per prescription = 0.34, percentage of drugs prescribed by generic name = 25.49, percentage of encounters with antibiotic prescribed = 9.33, percentage of encounters with an injection prescribed = 85.33, percentage of drugs prescribed from essential drug list = 41.1. The



study conducted by the **Harsh joshi et al.**, were similar in which average number of drugs per prescription =3.01, percentage of drugs prescribed by generic name=25.51, percentage of encounters with antibiotic prescribed=11.1, percentage of encounters with an injection prescribed=2.1, percentage of drugs prescribed from essential drug list=58.9.

**CONCLUSION:** A total of 150 patients were reviewed admitted in Obstetrics & Gynecology ward. The Majority of the patients belong to an age group of 22 years, (21, 14%). About 8 (5.33%) were found have the co-morbidity of hypothyroidism and followed by chronic bronchitis 2 (1.33%). No co-morbidity 135 (90%) were found in pregnant women in out-patients department. About pregnant women of 80 (53.33%) of third trimester are mostly seen and followed by pregnant women of 46 (30.66%) of second trimester and pregnant women of 24 (16%) of first trimester. Out of 150 study patients included in the study majority of patients, 36(24%) belonged to trimester of 8 months. Gravida condition of pregnant women were seen as Multi-Gravida of pregnant women 90 (60%) and followed by prime-Gravida of pregnant women 60 (40%). Out of 150 study patients included in the study. Total number of drugs prescribed are 51. Among them 11 drugs are in A-category, 22 drugs in B-category, 14 drugs in C-category and 2 drugs in each D & X category. US-FDA drugs pregnancy category were seen in mostly in the pregnant women of 22 (43.13%) of risk category B and followed by pregnant women of 14 (27.45%) of C category, pregnant women of 11 (21.56%) A category, pregnant women of D & X category 2 (3.92%). Commonly prescribed drugs in the study were mostly prescribed folic acid (96.66%) followed by Iron capsule (83.33%), calcium tablet (80%), T.T injection (79.33%), protein powder (41.33%). Percentage of risk category drugs in the study were seen of D & X category of 3.92%. Percentage of risk category drugs in the study was seen of D & X category of 3.92%. Evaluation of drugs based on the WHO prescribing Indicators: average number of drugs per prescription =0.34, percentage of drugs prescribed by generic name=25.49, percentage of encounters with antibiotic prescribed=9.33, percentage of encounters with an injection prescribed=85.33, percentage of drugs prescribed from essential drug list=41.1.

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