



**DRUG PRESCRIBING PATTERN AMONG IN - PATIENTS IN DEPARTMENT OF
OBSTETRICS AND GYNAECOLOGY IN A GOVERNMENT TERTIARY CARE
TEACHING HOSPITAL**

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ABSTRACT

Background: Irrational use of drugs during pregnancy may leads to teratogenic effects by directly act on the fetus causing damage or abnormal development leading to birth defects or death. It is a major huge worldwide problem. So, the aim of the study is to evaluate the prescribing pattern of drugs in obstetrics and gynecology department. **Methodology:** A prospective cross-sectional study was conducted in OBG department at MIMS Teaching hospital, Mandya. Patients who were satisfying the inclusion criteria will be enrolled into the study, for the period of six months. Totally 200 cases were collected. The patient data will be collected from medical records of inpatients of obstetrics and gynecology department. **Result:** Out of 200 cases age group between 18-27 years 149 (74.5%) are more admitted in OBG department. Among different classes of drugs antibiotics 359 (38.72%) are commonly prescribed medications in that cefotaxim (25.24%) was commonly used drug. The category B (54.69%) drugs are commonly prescribed in obstetrics patients. Maximum drugs are prescribed according to 2018 FDA essential drug list in that cefotaxim was commonly used. Out of 200 prescriptions 179 (89.5%) prescriptions contains poly therapy to treat various infections and disorders. **Conclusion:** The present study concludes that antibiotics are commonly prescribed to treat various infections as well as prophylactic therapy. Majority of the drugs were prescribed as per FDA category B drugs have not shown adverse effect on the fetus. Polytherapy was prescribed and these drugs do not posses teratogenicity

KEYWORDS: Prospective, Gynecology, Category, Obstetrics, Teratogenicity.

INTRODUCTION

Pregnancy is a time of profound physiological change in women body. Maternal drug use during pregnancy may pose a teratogenic risk to the fetus.^[1] They can act directly on the fetus causing damage or abnormal development leading to birth defects or death.^[2] Due to placental transport of maternal substrate to the fetus, substances of low molecular weight including drugs can diffuse freely across the placenta to fetus.^[3] To guide safe drug use during pregnancy, the Food and Drug Administration (FDA) of the United States has developed a scheme to rate the potential fetal risk of drugs that are classified into one of five major categories A, B, C, D and X3. The drug usage pattern in pregnancy presents a special concern because it is associated with physiological changes in the pharmacokinetic and pharmacodynamic actions of the drugs and also it poses a great risk to the maternal and fetal life.^[4]

Use of irrational drugs has lot of adverse consequences like delay/inability in affording relief/ cure of the disease, have more chances of adverse effects, loss of man days, increased incidence of morbidity and mortality, emergence of microbial resistance.^[5] According to World Health Organization there are five important criteria for rational drug use are accurate diagnosis, proper prescribing, correct dispensing, suitable packing and patient adherence.^[6]

These studies of drug use patterns helps in improving the standards of medical treatment at all levels in health system, also helps in the identification of problems related to drug use.^[7]

OBJECTIVE

- To analyze the commonly prescribed drugs in in-patients of obstetrics & gynecology department.
- To determine the commonly prescribed drugs comes under FDA categorization.

- To analyze the indication for which various drugs were prescribed and drugs comes under essential drug list 2018.

METHODOLOGY

Study population: 200 in-patients.

Study design: This is a hospital-based prospective cross-sectional study conducted on in-patients to review the current prescribing pattern of drugs in patients admitted in the obstetrics and gynecology department.

Study site: This study was conducted in MIMS teaching hospital, Mandya, Karnataka. It is a 500 bedded tertiary care hospital, providing specialized health care services to all strata of people in and around Mandya and also the rural population.

Study approval: Ethical clearance was obtained from the institutional ethics committee at Mandya institute of medical sciences, Mandya.

Inclusion criteria

- Age of >14years of age.
- Females admitted in obstetrics and gynecology department
- Pregnant and lactating women.

Exclusion criteria

- Out- patient department cases.
- Patient discharge against medical advice.

Study procedure: In-patients who met the study criteria were enrolled to the study for assessing prescription pattern after obtaining their written informed consent form from patient/patient care taker in obstetrics and gynaecology. The data collecting format had framed based on study need, it includes demographical details of patients and types and duration of illness and details of different classes of drugs prescribed to the patients.

Statistical methods: The data were subjected to descriptive statistical analysis using Microsoft excel. Microsoft word and excel have been used to generate bar graph, pie charts and tables.

RESULT

This study was conducted in the Obstetrics and gynecology department of MIMS Teaching Hospital, Mandya. A total of 200 patients who were admitted in the obstetrics and gynecology department were enrolled in the study based on study criteria. The required details from the patient case sheet were recorded in a suitably designed patient profile form. Out of 200 patients, Most of the patients were under the age group of 18-27(Figure 1). The patients were categorized based on age and condition. The other classifications includes commonly prescribed class of drug, individual drug used, route of administration, essential drugs used, mostly used category of drugs and type of therapy followed.

Grouping based on age

Out of 200 patients 149 patients are of age group 18-27 (74.5%) are more admitted in OBG department followed by 32patients of age group 28-37 (16%),9 patients of age group 38-47 (4.5%), 5 patients of age group 48-57 (2.5%), 3 patients of age group 58-67 (1.5%) and 2 patients of age group >68 (1%). (Table 1).

Table 1: Age wise categorization.

Age(In years)	No. of patients	Percentage
18-27	149	74.5%
28-37	32	16%
38-47	9	4.5%
48-57	5	2.5%
58-67	3	1.5%
>68	2	1%

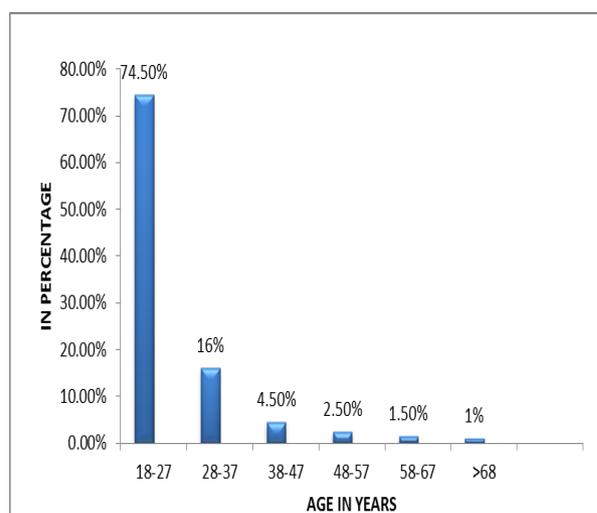


Figure 1: Age wise categorization.

Based on type of therapy

In the 200 prescriptions, 179 (89.5%) prescriptions are of poly therapy, followed by 17 (8.5%) contain tri- therapy and 4 (2.00%) prescriptions are of bi-therapy.(Table 2).

Table 2: Based on therapy classification.

Type of therapy	Number of prescriptions	Percentage
MONO -THERAPY	Nil	Nil
BI -THERAPY	4	2.00%
TRI- THERAPY	17	8.5%
POLY -THERAPY	179	89.5%

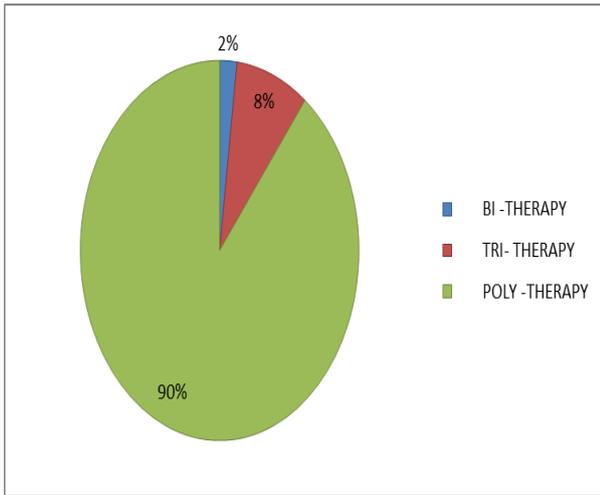


Figure 2: Based on therapy classification.

Categorization of patients based on conditions

All the patients were assessed for different condition status and classified, out of these patients, 112(56%) were found to be undergone for safe confinement followed by 38 (19%) were affected with pih, 17(8.5%) were having oligohydrominos, 9(4.5%) patients were undergone for treatment of hypothyroidism, 9(4.5%)

patients were reported with fibroid uterus, 4(2%) patients were affected with diabetes mellitus, 3(1.5%) patients are having the condition of asthma, 3(1.5%) patients were reported with uterine cancer condition, 3(1.5%) patients were complained with ovarian cyst, 2(1%) patients were under anemic conditions.(table 3).

Table 3: Categorization based on condition.

Conditions	Number of patients	Percentage
Active phase of labour	112	56%
Pregnancy induced hypertension	38	19%
Oligohydrominos	17	8.5%
Hypothyroidism	9	4.5%
Fibroid uterus	9	4.5%
Gestrational diabetes melitus	4	2%
Asthma	3	1.5%
Cancer	3	1.5%
Ovarian cyst	3	1.5%
Anaemia	2	1%

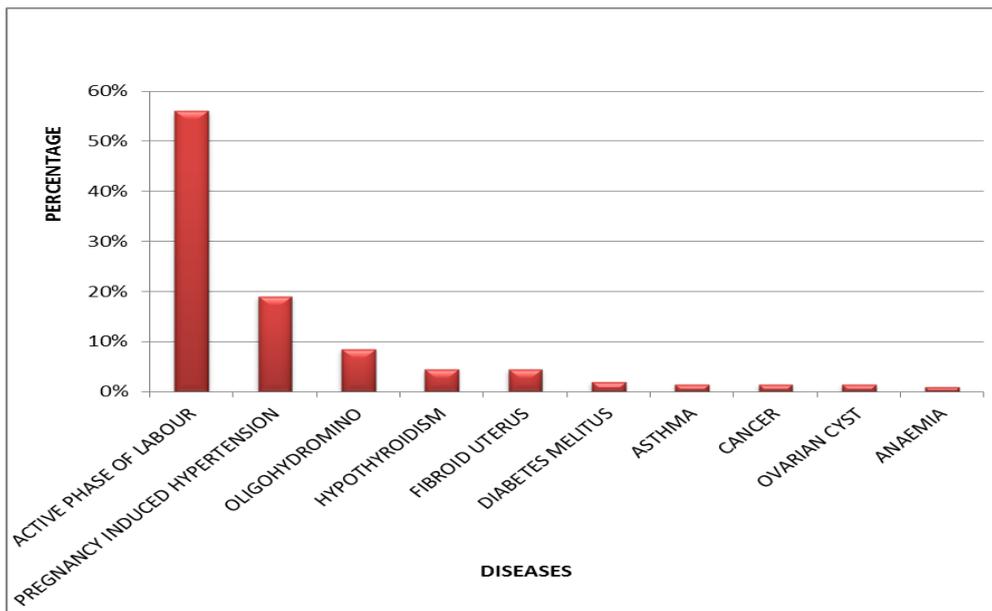


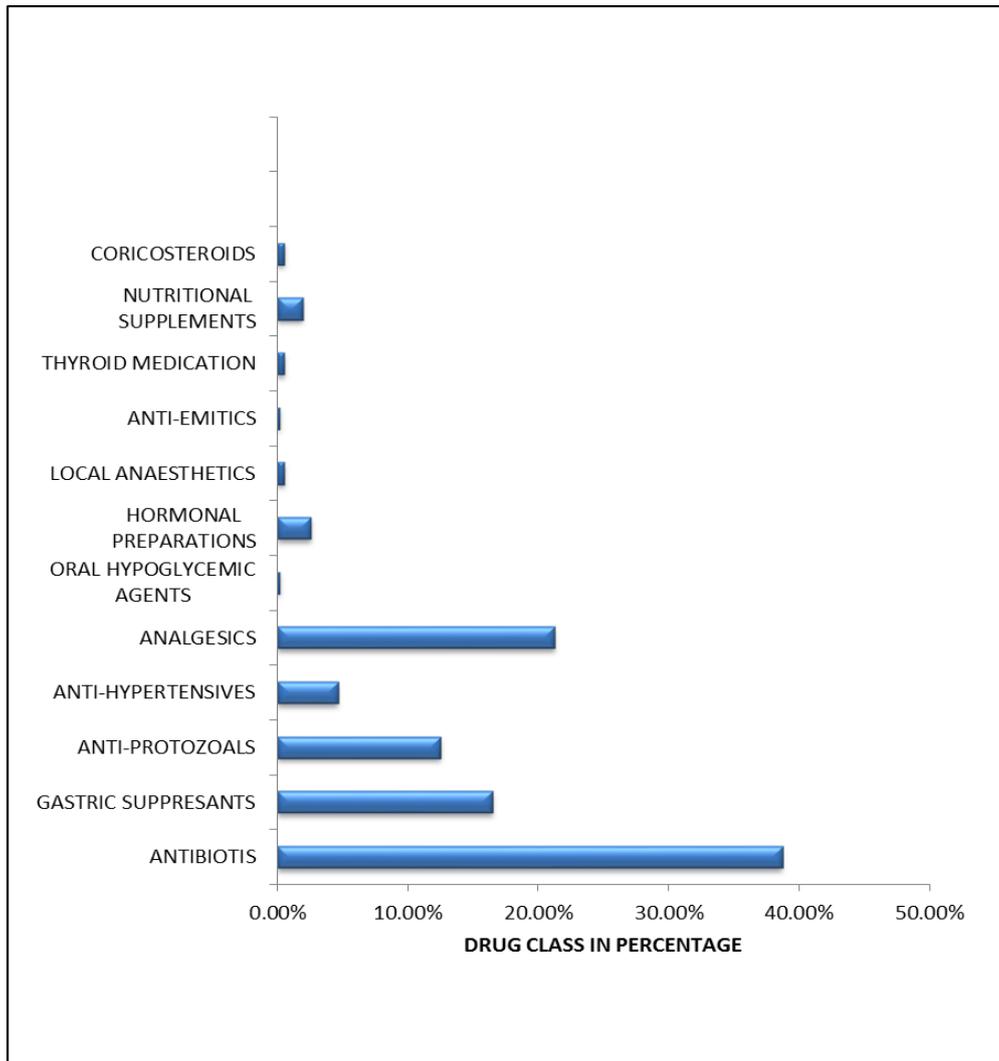
Figure 3: Categorization based on condition.

Commonly prescribed class of drug

Among the different classes of drugs. The commonly prescribed class of drug is antibiotics 359(38.72%) followed by gastric suppressants 16.50%, anti-protozoal agents 12.51%, anti- hypertensive 4.63%, analgesics 21.25%, oral hypoglycemic agents 0.21%, hormonal preparation 2.58%, local anesthetics 0.53%, anti- emetics 0.21%, thyroid medication 0.53%, nutritional supplements 1.94% and corticosteroids 0.53%.(table 4).

Table 4: Commonly prescribed drug class.

Class of drugs	Number of drugs	Percentage of drugs
Antibiotis	359	38.72%
Gastric suppressants	153	16.50%
Anti-protozoals	116	12.51%
Anti-hypertensives	43	4.63%
Analgesics	197	21.25%
Oral hypoglycemic agents	2	0.21%
Hormonal preparations	24	2.58%
Local anaesthetics	5	0.53%
Anti-emetics	2	0.21%
Thyroid medication	5	0.53%
Nutritional supplements	18	1.94%
Coricosteroids	5	0.53%

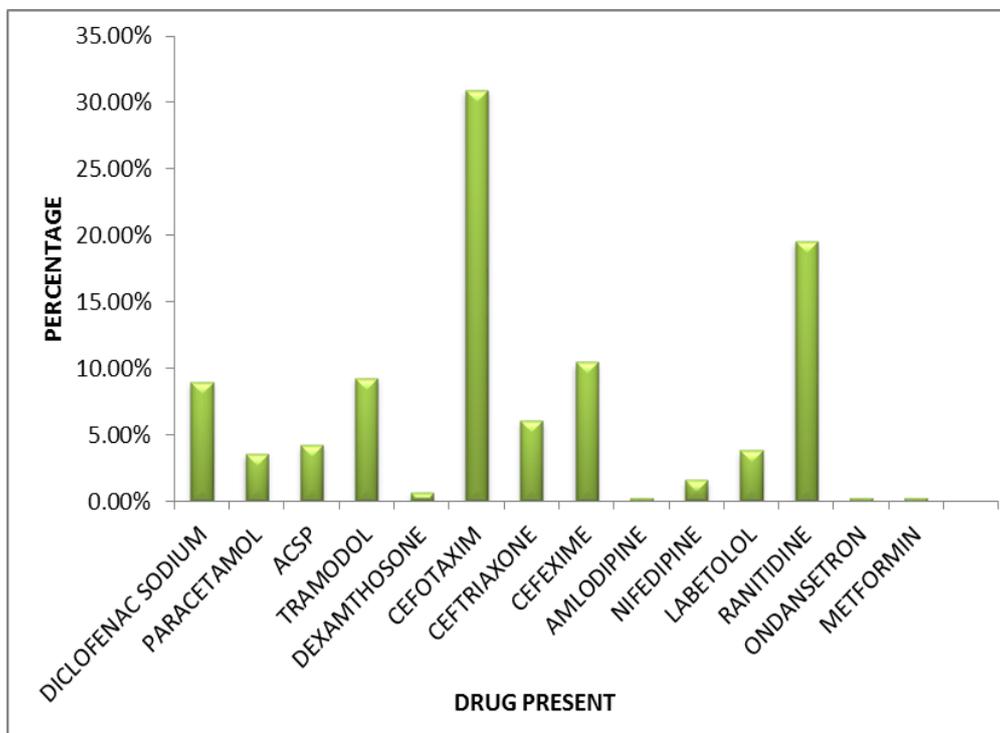
**Figure 4: Commonly prescribed class of drug.****Drugs comes under essential drug list**

According to 2016- 2018 FDA essential drug list, the following drugs were present in the 200 prescriptions. Diclofenac sodium 8.99%, Paracetamol 3.57%, ACSP 4.23%, Tramadol 9.25%, Dexamethasone 0.66%, Cefotaxim 30.95%, Ceftriaxone 6.08%, Cefixime 10.44%, Amlodipine 0.26%, Nifedipine 1.58%, Labetolol 3.83%, Ranitidine 19.57%, Ondansetron

0.26% and Metformin 0.26%.(Table 5).

Table 5: Classification based on essential drug list.

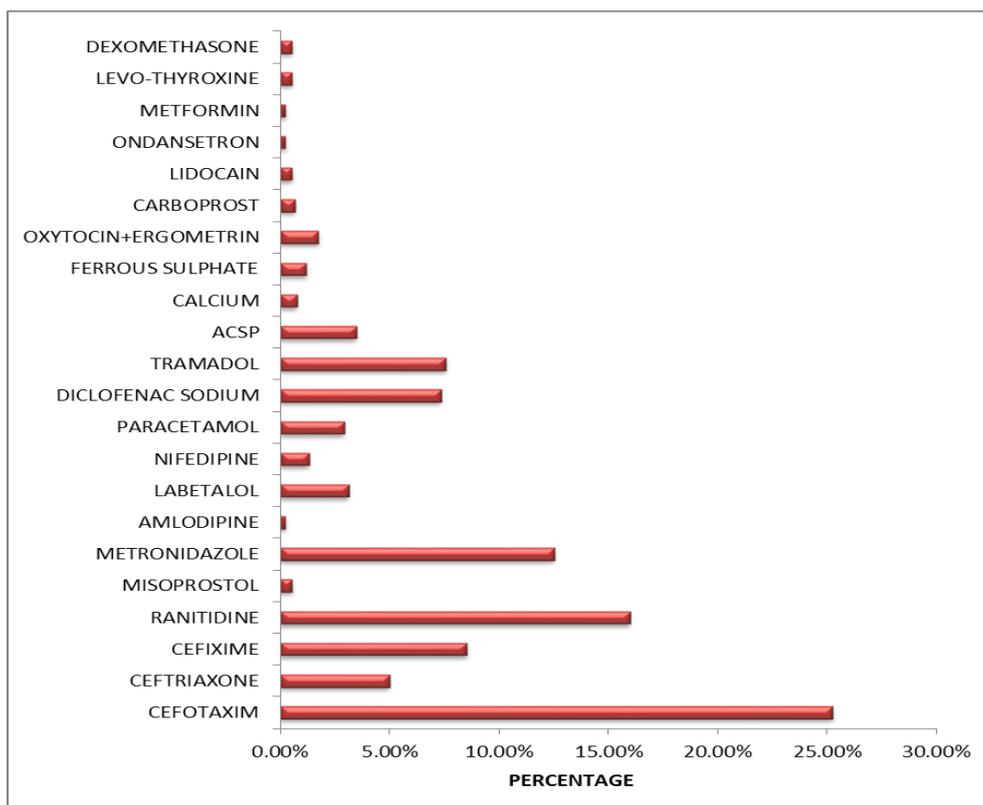
Drug present	Number of drugs	In percentage
Diclofenac sodium	68	8.99%
Paracetamol	27	3.57%
Aceclofenac+Serratiopeptidase	32	4.23%
Tramadol	70	9.25%
Dexamethasone	5	0.66%
Cefotaxim	234	30.95%
Ceftriaxone	46	6.08%
Cefexime	79	10.44%
Amlodipine	2	0.26%
Nifedipine	12	1.58%
Labetolol	29	3.83%
Ranitidine	148	19.57%
Ondansetron	2	0.26%
Metformin	2	0.26%

**Figure 5: Classification based on essential drug list present.****Classification based on individual drug**

Totally 927 drugs are prescribed in that Cefotaxim 25.24% was the commonly prescribed individual drug, followed by Ceftriaxone 4.96%, Cefixime 8.52%, Ranitidine 15.96%, Misoprostol 0.53%, Metronidazole 12.51%, Amlodipine 0.21%, Labetalol 3.12%, Nifedipine 1.29%, Paracetamol 2.91%, Diclofenac sodium 7.33%, Tramadol 7.55%, ACSP 3.45%, Calcium 0.75%, Ferrous sulphate 1.18%, Oxytocin+Ergometrin 1.72%, Carboprost 0.64%, Lidocaine 0.53%, Ondansetron 0.21%, Metformin 0.21% Levo-Thyroxin 0.53% and Dexomethasone 0.53%.(Table 6).

Table 6: Classification based on individual drug.

Name of the drug	Number of drugs	In percentage
Cefotaxim	234	25.24%
Ceftriaxone	46	4.96%
Cefixime	79	8.52%
Ranitidine	148	15.96%
Misoprostol	5	0.53%
Metronidazole	116	12.51%
Amlodipine	2	0.21%
Labetalol	29	3.12%
Nifedipine	12	1.29%
Paracetamol	27	2.91%
Diclofenac sodium	68	7.33%
Tramadol	70	7.55%
Acsp	32	3.45%
Calcium	7	0.75%
Ferrous sulphate	11	1.18%
Oxytocin+Ergometrin	16	1.72%
Carboprost	6	0.64%
Lidocaine	5	0.53%
Ondansetron	2	0.21%
Metformin	2	0.21%
Levo-thyroxine	5	0.53%
Dexamethasone	5	0.53%

**Figure 6: Classification based on individual drug.****Classification based on category of obstetrics drug**

Our study reveals that category B drugs which are safe during pregnancy 409 (50.36%) are commonly prescribe for obstetrics patients, followed by category A drugs 333 (41.00%) category C drugs 43 (5.29%). (Table 7).

Table 7: Classification based on category of obstetrics drugs.

Category of drugs	Number of drugs	Percentage of drugs
Category A	333	41.00%
Category B	409	50.36%
Category C	43	5.29%
Category D	Nil	Nil
Category X	27	3.32%

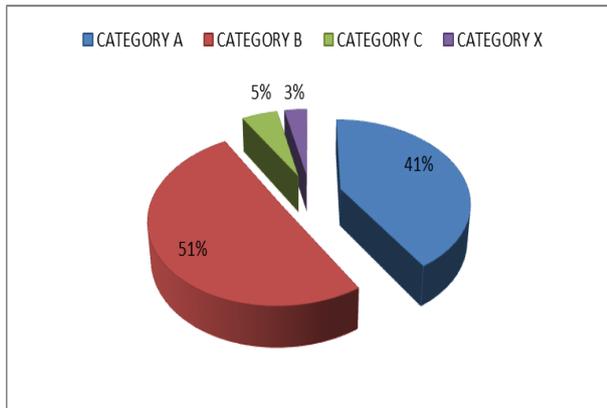


Figure 7: Classification based on category of obstetrics drugs.

Classification of based on route of administration

In the patients, the most frequently used route for drug administration were Intra venous 63.21%, followed by Intra muscular route 7.55%, oral route 28.69% and Subcutaneous 0.53%.(Table 8).

Table 8: Classification based on route of administration.

Route of administration	Number of drugs	Percentage of drugs
Intra venous	586	63.21%
Intra muscular	70	7.55%
Oral route	266	28.69%
Subcutaneous	5	0.53%

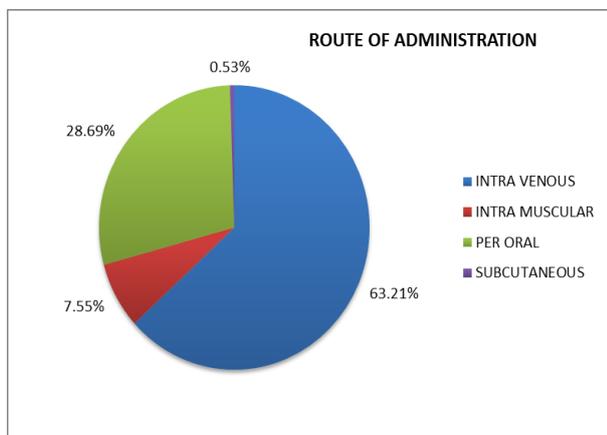


Figure 8: Classification of drugs based on rout of administration.

DISCUSSION

A total of 200 patients who are admitted in Mandya Institute of Medical sciences and Teaching Hospital were enrolled in the study based on study criteria. The required details from the patient case sheet were recorded in a suitably designed patient profile form.

Among the cases, there were 174 obstetrics cases and 26 gynecological cases. Out of 200 patients 149 patients are of age group 18-27 (74.5%) are more admitted in OBG department. Most of the patients were prescribed with multiple drug therapy or poly therapy 179 patients (89.5%). In the admitted patients 112 patients (56%) were undergone for safe confinement. The least patients 2(1%) were admitted for anemic condition. The commonly prescribed class of drug is Antibiotics 359 (38.72%) to treat various infections as well as prophylactic therapy. According to 2018 FDA essential drug list, the following drugs were present in the prescriptions, Diclofenac sodium 8.99%, Paracetamol 3.57%, ACSP 4.23%, Tramadol 9.25%, Dexamethasone 0.66%, Cefotaxim 30.95%, Ceftriaxone 6.08%, Cefixime 10.44%, Amlodipine 0.26%, Nifedipine 1.58%, Labetolol 3.83%, Ranitidine 19.57%, Ondansetron 0.26% and Metformin 0.26%. Totally 927 drugs are prescribed in 200 patients in that Cefotaxim 25.24% was the commonly prescribed individual drug. According to FDA category of drugs during pregnancy Category B drugs which are safe during pregnancy 409(50.36%) are commonly prescribed. Intra venous 63.21%. were most commonly administered route to get a good therapeutic outcome.

CONCLUSION

The present study concludes that antibiotics are commonly prescribed to treat various infections as well as prophylactic therapy. Drugs prescribed in OBG department are rational and does not posses teratogenicity. Commonly polytherapy was given to treat the various diseases or disorders. Majority of the drugs were prescribed as per FDA category B drugs in which Animal studies have not shown adverse effect on the fetus and there are inadequate clinical studies and this category drugs are safer during pregnancy. Category X drugs also prescribed mainly oxytocin and ergometrine combination used during or immediately after the delivery of a baby to help the birth and to prevent or treat excessive bleeding.

Educational interventions are required to promote rational use of drugs and awareness of deleterious impact of irrational prescribing habit on the community and all members of the health care system are needed.

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CONFLICT OF INTEREST: The authors declared no conflict of interest.

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