

**DRUG UTILISATION STUDY IN GYNAECOLOGICAL POST OPERATIVE
CASES: A RETROSPECTIVE STUDY****¹Dr. Divyashree L. R., ²*Dr. Aruna Bhushan and ³Dr. Tejaswini K.**¹Post Graduate Department of Pharmacology, BIMS, Belagavi-590001. Karnataka, India.²Associate Professor, Department of Pharmacology, BIMS, Belagavi-590001. Karnataka, India.³Post Graduate Department of Pharmacology, BIMS, Belagavi-590001. Karnataka, India.***Corresponding Author: Dr. Aruna Bhushan**

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ABSTRACT

Introduction: Drug utilisation studies are useful in the drug use patterns and in improving the standards of medical treatment at all levels in health system. It also helps in the identification of problems related to drug use. The aim of this study was to evaluate the drug usage in gynaecological post operative patients of tertiary care hospital BIMS. **Methods:** The data of post operative gynaecological patients of a tertiary care hospital was collected from the medical record department of BIMS over a period of one year. 100 case reports data were entered in a specially designed proforma after obtaining the approval of Institutional ethics committee. The data was analyzed using various drug use indicators given by the WHO in our retrospective study. **Results:** The total of 100 cases data were analysed, the mean age was 45.57 ± 9.62 years. The most common surgery done was hysterectomy 87%. Drugs prescribed were antimicrobial, intravenous fluids 100%, next commonly prescribed were analgesics, H2 antihistaminics and antiemetic. In our study the percentage of encounters with an intravenous injection prescribed was 98%. Most of the drugs prescribed were from the essential drugs list, and drugs prescribed by generic name 29.4% and brand name were 70.6%. **Conclusion:** The present study facilitate the rational drug use and helps to improve the quality of prescribing a safe and efficacy drugs in post operative surgical cases.

KEYWORDS: Gynaecological patients, drug utilisation, post-operative.**INTRODUCTION**

A drug utilisation (DU) study is an ongoing, authorized and systemic quality improvement process. WHO in 1977 defined DU study as "The marketing, distribution, prescription and use of drugs in a society with special emphasis on the resulting medical, social and economic consequences".^[1] These studies are designed to review drug use and prescribing patterns of drug with current recommendations or guidelines for the treatment of certain disease. DU studies evaluate drug use at a population level, according to age, sex, social class. They provide feedback of drug utilisation data to the prescribers. A large number of pharmaceutical products are marketed all over the world; increased use of these drugs has in turn increased the expenditure. Irrational prescription of drug is common occurrence in clinical practice, because of lack of drug knowledge and unethical drug promotion.^[2]

Post operative utilisation of drug is very much needed, as many drugs are prescribed for the management of pain, prevention of infection, nausea and vomiting, to maintain haemodynamic status.^[3] The principle of the drug utilisation research is to facilitate the rational use of the

drugs in populations. 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.^[4] They also relate to the number of cases of adverse effects to the number of patients exposed and appropriate drug use.

Polypharmacy is also more common before, during and after surgery. Injudicious use of these drugs can be avoided by evaluating the drug utilisation. So this study was undertaken in our tertiary care hospital to evaluate the utilisation pattern of drugs and to monitor the rationality of the usage of medications among the post operative gynaecological patients.

MATERIALS AND METHODS

A Retrospective study was done, the data of post operative gynaecological patients was collected from the medical record department of Belagavi Institute of Medical Sciences, Belagavi. After obtaining approval and clearance from the Institutional Ethics Committee a total of 100 inpatient prescription records were collected from April 2015 to March 2016. The patients those who fulfilled inclusion and exclusion criteria were included in

our study. **Inclusion criteria:** i) All patients undergoing commonly performed gynaecological operations [Abdominal & vaginal Hysterectomy, D& C] ii) Patient above 18 years of age.

Exclusion criteria: i) Patients referred to higher centre ii) Patient discharged against medical advice.

Data analysis

The data was analysed using various drug use indicators given by the WHO, as age wise distribution, diagnosis of included patients, type of operation performed, type of drug prescribed to the patients, route of drug administration, antibiotics prescribed to the patients, prescriptions with polypharmacy, duration of hospital stay, associated co morbidities.

Statistical methods

The present study was analysed by descriptive and inferential statistical analysis. Data was analysed on software using SAS 9.2 and R environment ver.2.11.1. Microsoft word and excel to generate graphs, tables etc. have been used.

RESULTS

In the present study total numbers of encounters were 100. The mean age of women undergoing gynaecological procedure was 45.57±9.62 years (mean±SD). The patients most commonly were age group of 41-50 years 41(41%) followed by 31-40 years 21(21%), 51-60 were 17%, 61-70 were 9%, least were of the age group 21-30 years 6(6%).

Patients were examined and diagnosed, had underwent different types of surgeries. Hysterectomy was the most common surgery 87(87%) conducted, followed by dilatation and curettage (D&C) 13(13%). Among the hysterectomy, most commonly performed surgery was total abdominal hysterectomy 47(47%) shown in the “Fig. 1 and 2”.

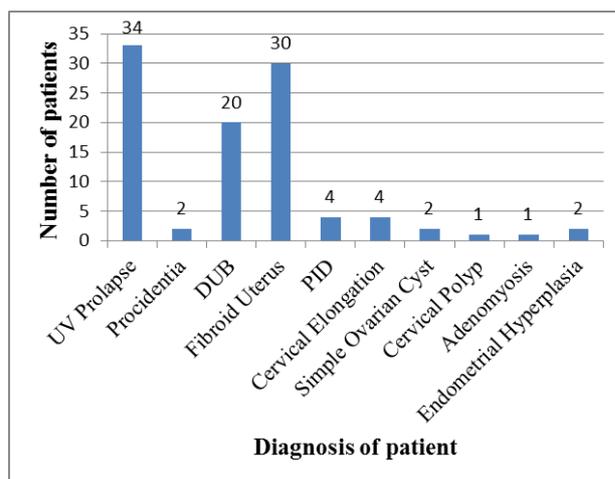


Figure1: Indications for gynaecological operations.

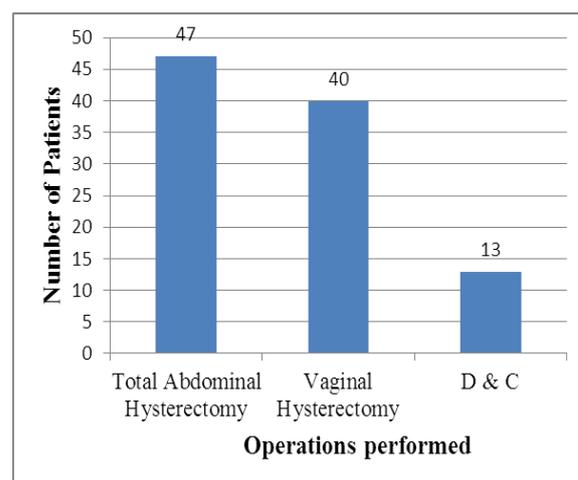


Figure 2: Type of surgeries performed.

Drugs prescribed to the inpatients who had undergone gynaecological surgeries is shown in the “Table 1” and administration of these drugs by different routes is shown in the “Fig. 3” parenteral intravenous route was most common 98%.

Table 1: showing different group of drugs prescribed to the patients

| Sl. No. | Drug | Group of drug | Percentage |
|----------------------------|-------------------------|------------------|------------|
| I Antibiotic | | | |
| i) | Cefotaxime | Cephalosporins | 99% |
| ii) | Gentamycin | Aminoglycosides | 90% |
| iii) | Metronidazole | Nitroimidazole | 98% |
| iv) | Tinidazole | Nitroimidazole | 29% |
| v) | Ciprofloxacin | Fluoroquinolones | 14% |
| vi) | Cefixime | Cephalosporins | 2% |
| vii) | Ceftriaxone | Cephalosporins | 1% |
| II Analgesics | | | |
| i) | Diclofenac | NSAIDS | 49% |
| ii) | Tramadol | Opioid | 56% |
| iii) | Tramadol+ Acetaminophen | Opioid + NSAIDS | 28% |
| III Antiemetic | | | |
| i) | Metoclopramide | Prokinetic drug | 79% |
| IV Antifibrinolytic | | | |

| | | | |
|------------|-------------------------------------|---------------------|------|
| i) | Tranexamic acid | Antifibrinolytic | 13% |
| V | Stimulant Purgative | | |
| i) | Bisacodyl | Diphenylmethanes | 12% |
| VI | Diuretic | | |
| i) | Furosemide | Loop diuretic | 1% |
| VII | Bronchodilators | | |
| i) | Theophylline | Methylxanthines | 2% |
| ii) | Salbutamol nebulisation | β2 Sympathomimetic | 3% |
| IX | H2 Antihistaminics | | |
| | Ranitidine | H2 receptor blocker | 98% |
| X | Intravenous Fluids | | 100% |
| | Ringer lactate/ 5% dextrose/ saline | | |

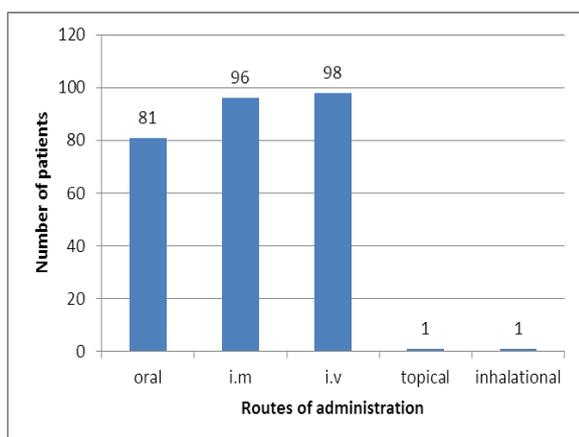


Figure 3: showing different route of drug administration

Prescriptions analysed showed polypharmacy. More number of patients 41 were prescribed with 9 drugs. The total number of the drugs prescribed ranged from 5 to 14 is shown in the “Table 2”.

Table 2: showing total number of drugs prescribed per patient.

| Number of drugs | Number of patients (n=100) | Percentage |
|-----------------|----------------------------|------------|
| 5 | 1 | 1 % |
| 6 | 9 | 9 % |
| 7 | 10 | 10% |
| 8 | 13 | 13% |
| 9 | 41 | 41% |
| 10 | 17 | 17% |
| 11 | 5 | 5 % |
| 12 | 3 | 3 % |
| 14 | 1 | 1 % |

“Fig. 4” shows the duration of stay of the patients in the gynaecological ward. Most of the patients stay was extended for more than 10 days. Fig. 5 depicts the co morbid conditions.

Most of the drugs were prescribed from the essential drugs list. Out of 17 different drugs prescribed, 5 drugs were generic name (29.4%) and remaining 12 were brand name (70.6%).

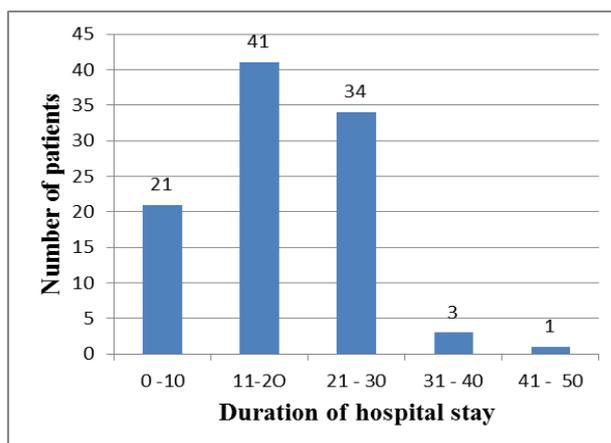


Figure 4: showing the duration of hospital stay

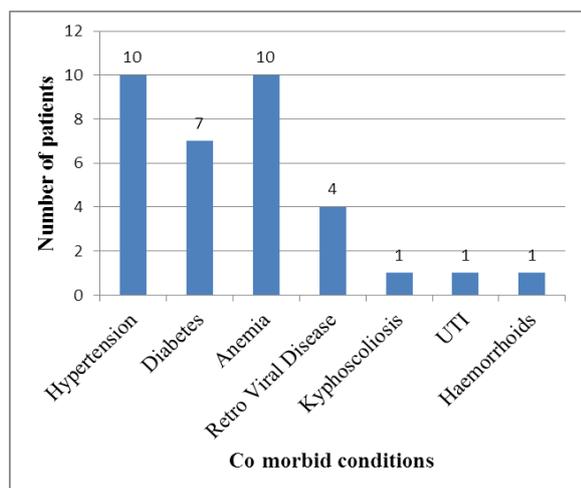


Figure 5: Associated co-morbid Disease.

DISCUSSION

A drug utilisation study is an authorized and systemic quality improvement process. These studies are designed to review drug use and prescribing patterns of drug as per the guidelines. A total of 100 cases studied, the mean age of women undergoing gynaecological procedure was 45.57 ± 9.62 years which was comparable to the other studies finding, the mean age were 42.4 ± 14.8 and 43.75 ± 9.74 .^[5, 6] This indicated that the patient's were close to menopausal age group. In contrast to our study, some studies showed less than 40 years.^[7]

In the present study, the most common surgery performed was hysterectomy 87% of the total patients. Most of the patients were from low socioeconomic status. Our value was higher than the other studies findings 30.24%, 19.44% and 11.30%.^[3, 8, 9]

Most commonly prescribed drugs were intravenous fluids (100%) and antibiotics (100%). i.v fluids administered were Ringer lactate, 5% dextrose and normal saline to replace the lost fluids and provide electrolyte or carbohydrates to the body. This finding was similar to other study.^[10]

Antibiotics were also commonly prescribed drugs to all the patients and in most of the patients culture and sensitivity tests were not done. Prescription of antibiotics without evidence of culture and sensitivity tests is another major problem, which results in poor patient compliance. A strict antibiotic prescription policies, has to be developed and target must be aimed to minimize the incidence of resistance to antimicrobial agents and also to promote infection control practices and rational antibiotic utilization.^[11] Antimicrobial were used as a prophylaxis to prevent post operative infection at surgical site which was in accordance with number of other studies.^[12-15] Among the antimicrobials, cefotaxime (99%) and metronidazole (98%) was commonly used for prophylaxis of post operative infections and anaerobic infections. Cephalosporins were also commonly used in other studies.^[16, 17] In contrast to a study done,

ciprofloxacin was maximum used drug (60.9%) and metronidazole used was (39.69%).^[9] Preference in the use of antimicrobials was due to availability of free drugs from hospital supply and it was more as a blanket therapy to prevent all the infections. Though cephalosporins are potent drugs, but frequent and increased use of these drugs has increased the emergence of drug resistant bacterial strains, extends the hospital stay and increase in the financial burden on the patient.

The average number of antibiotics used in our studies was 3.5, our values were higher than a study done by Abula T et al were it was 2.18 and much lesser than Agarwal et al 5.30.^[18, 3] The prescribers can minimize this by adhering to rational antibiotic utilization.

Next commonly prescribed drugs was analgesics (99%), tramadol 56% and diclofenac 49%, use of these drug has almost become mandatory following surgery for the management of post operative pain. In some studies opioid analgesic used was tramadol but it was much higher 87% and pentazocine 86.4%.^[19, 20] Few studies have shown that use of diclofenac was much preferred than pentazocine and tramadol.^[21, 22]

H2 antihistaminic (98%), antiemetic (79%), antifibrinolytic (23%), purgative (11%), bronchodilators (2%), nebulisation (2%), lasix (1%) were the other drugs prescribed. Bronchodilator and nebulisation was administered to two cases who had difficulty in breathing but were not asthmatic.

In our study, drugs were administered to the patients by different routes. Intravenous route was the most common constituting 98% and the second most common route was intramuscular 96%. These routes were routinely used and later switched on to oral route of drug administration. Our values were much higher than the other study 57.04%.^[10]

The average number of drugs per prescription was 9.62 in our study with range of 5 to 14, which is much lesser to the findings of other studies which it was 9.8, 10.56 and 10.60.^[2, 3, 10] The polypharmacy was because of the routine use of i.v fluids, antibiotics, analgesics, H2 antihistaminic, antiemetic thus the average number of drugs per prescription was high and this can be minimized by avoiding the use of two or more antibiotics without culture and sensitivity test. Use of number of drugs per prescription can decrease benefit-risk ratio and lead to increased risk of drug interaction,^[23] adverse drug reaction, and also can extent the duration of hospital stay. In our study hospital stay is extended for more than 10 days as it could be due to co morbid conditions or post operative infections.

In our study, we found that most of the drugs prescribed were from the essential drugs list, and were prescribed by their brand name and these drugs were procured from hospital stores. Out of 17 different drugs prescribed, 5

drugs were generic name (29.4%) and remaining 12 were brand name (70.6%), our values were much higher than other study 39%.^[24] Use of generic name is recommended as for better identification of drug by its scientific name and thus helps for rational drug use, with regard to safety and cost.

CONCLUSION

The present study provides valuable information about the utilization of drugs in the gynaecological postoperative cases. Number of antimicrobials by intravenous route, are used to achieve quick plasma concentration and to avoid infection at surgical sites. Multiple/ high end antibiotics are used with false belief of being more effective. The clinicians practicing must develop standard operating procedures for more effective antimicrobial therapy. Drug utilisation research can help to improve in prescribing safe and efficacy drugs and to avoid irrational prescription, emergence of drug resistance, adverse drug reactions and to set priorities for the rational allocation of health care budgets.

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