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PRESCRIBING PATTERN OF DRUGS IN POST-OPERATIVE PATIENTS OF OBSTRETICS & GYNAECOLOGY DEPARTMENT IN A TERTIARY CARE TEACHING HOSPITAL IN UTTAR PRADESH

Pharmacology

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ABSTRACT

The study is a prospective observational study carried out on 296 patients of post-operative cases for duration of 6 months at UPUMS, Saifai at Deptt. of obs & gyane, after obtaining Ethical permission to determine possible rational use of drugs. The prescriptions were assessed for patient's demographic data, antimicrobial preference, dose, duration, route of administration, categorization of drugs according to FDA, and rationality score as per the WHO. Most of the Patients were in the Age group of 20-30(67.90%). 63 Patients were prescribed by 4 drugs (21.28%). LSCS (48.64%) was the most commonly performed surgery. The average number of drugs per patient was 9.35. The most frequently prescribed drugs were Tab. Ranitidine (98.31%). The brand drugs used are 66.28%%, generic drugs – 33.72% .The present study provides valuable insight about the overall pattern of drug used in postoperative patients in the obstetrics and gynecology unit of a tertiary care hospital.

KEYWORDS

Drug Utilization, Gynecology, Antibiotics.

INTRODUCTION

The prescription is one of the most important therapeutic transactions between physician and patient. It is a written order for the medication to be used for diagnosis, prevention and treatment of specific patient directed by physician[1,2]. Monitoring prescriptions and drug utilization studies could identify the associated problems and provide feedback to prescribers[3].

Drug utilization (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".[4] The principal aim of drug utilization research is to facilitate rational use of drugs in the populations. Without knowledge, how drugs are being prescribed and used it is difficult to suggest measure to change prescribing habits for better.

Antibiotics are one of the pillars of modern medical care and plays major role both in prophylaxis and treatment of infectious diseases. The issues of their availability, selection, and proper use are of critical importance to the global community. Antibiotic misuses are however, a worldwide problem with the extent of the problem being greater in the developing countries through their purchase (without prescription) in local pharmacies and drug stores, and through inappropriate prescribing habits and an over-Zealous desire to treat severe infections.[5]

Rational usage of antibiotics in postoperative patients reduces mortality in patients.[6] It is need of hour to ensure safe medication with minimal adverse drug reactions and to ensure proper dosage regimen.[7]Although rational use of drugs is quite a usual practice but sometimes certain factors may cause irrational practice. Monitoring of prescriptions and drug utilization studies could identify the associated problems and provide feedback to prescribers.[8] Developing countries have limited funds available for healthcare and drugs and it becomes very important to prescribe drug rationally so that the available funds can be utilized optimally.[9]

Postoperative utilization of drugs is very much marked. Drugs are prescribed for the purpose of analgesia, prevention of infection, nausea and vomiting, intravenous fluids so forth and so on. Polypharmacy is also more common before, during and after surgery. Injudicious use of these drugs can be avoided by evaluating the drug utilization. Also there are very few studies which describe the utilization of drugs postoperatively. So this study was undertaken in our tertiary care hospital to evaluate the utilization pattern of drugs and to monitor the rationality of the usage of medications and their cost among the post operative Gynecological patients.

MATERIALS AND METHODS

The present prospective and observational study was conducted in Department of Obstetrics and Gynecology of a UPUMS, Saifai, Etawah a tertiary care teaching hospital in Uttar Pradesh for the period of 6 months.

Prior permission was obtained from the Institutional Ethics Committee for conducting the study. As per selection criteria, total 296 patients were enrolled in the study and data of such patients like name, age, sex, diagnosis, ongoing treatment were recorded and analyzed.

Inclusion Criteria:

1. Patients aged more than 18 years.
2. Post-operative patients till discharged, in Obstetrics and Gynaecology Department of hospital.

Exclusion Criteria:

1. Any patient that dies post-operatively before being discharged.
2. Patient absconded/discharged against medical advice.
3. Patients who refused to give informed consent.

Data analysis

The data was analyzed 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, No of drugs per prescriptions, Average cost per Encounters.

Statistical methods

The present study was analyzed by descriptive and inferential statistical analysis. Data was analyzed and Microsoft word and excel to generate graphs, tables etc. have been used.

RESULTS

During the study Period, a total of 296 Patients undergoing different kinds of surgeries were enrolled. Out of 296 Patients it was observed that majority of Patients was in the Age group of 20-30 (67.90%) followed by Age group of 30-40 (21.95%) while Patients with age group of <20 was minimum (4.72%) as shown in Figure no 1.

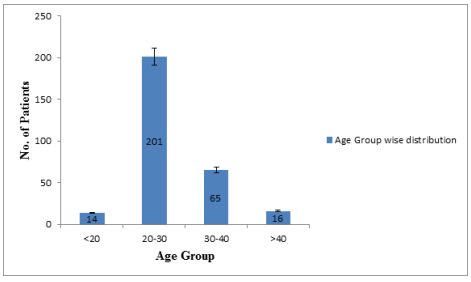

Figure no 1: Age group of Patients

In our study, it was seen that Majority of Patients(63) was prescribed with 4 drugs(21.28%) followed by 62 Patients with 6 drugs (20.94%), 55 Patients with 5 drugs(18.58%) while only only 2 Patients were prescribed with 2 drugs(0.67%) as shown in Table no 1.

Table no 1: No. of drugs per Prescription

No. of Drugs	No. of Encounters(n=296)	Percentage (%)
2	2	0.67
3	20	6.75
4	63	21.28
5	55	18.58
6	62	20.94
7	28	9.45
8	14	4.72
9	12	4.05
10	9	3.04
11	11	3.71
12	9	3.04
>12	11	3.71

During the Study Period, out of 296 Surgery Performed 144 patients underwent LSCS surgery (48.64%) which was proved to be largest no of surgery. Followed by it, 52 Patients underwent Hysterectomy which was Second largest no of surgery (17.56%) performed while only 2 Patients underwent Myomectomy which was the least no. of surgery Performed (0.67%) as depicted in Table no 2.

Table no 2: Types of Surgery Performed

Types of Surgery	No. of Surgeries(n=296)	Percentage (%)
LSCS	144	48.64
HYSTERECTOMY	52	17.56
Total abdominal hysterectomy(TAH)	29	9.79
Total Vaginal hysterectomy	9	3.04
TAH with bilateral Salpingo-oophorecomy	14	4.72
DILATION & CURRETEGE (D & C)	32	10.81
EMERGENCY LAPROTOMY	28	9.45
CYSTECTOMY	12	4.05
WOUND GAP REPAIR	08	2.70
CERVICAL BIOPSY	04	1.35
MYOMECTOMY	02	0.67
MISCELLANEOUS	14	4.72

Out of 296 Encounters Maximum drug cost per Surgery INR(Overall) was for Wound repair gap (1700.85) followed by LSCS (1366.40) while Maximum drug cost per Surgery INR(Antibiotics) was also for Wound repair gap(1599.20) followed by Myomectomy(1175.04) as shown in table no 3.

Table no 3: Average Drug cost/Different Surgeries

Types of Surgery	Average drug cost/Surgery INR(Overall)	Average drug cost/Surgery INR(Antibiotics)
LSCS	1366.40	1122.67
HYSTERECTOMY	1298.27	1098.77
DILATION & CURRETEGE (D & C)	109.52	68.90
EMERGENCY LAPROTOMY	1102.29	935.95
CYSTECTOMY	1272.82	958.20
WOUND GAP REPAIR	1700.85	1599.20
CERVICAL BIOPSY	322.09	229.32
MYOMECTOMY	1309.05	1175.04
MISCELLANEOUS	823.62	612.81

In our Study, out of 296 Patients 129 patients were Prescribed with Maximum no.(4) of Antibiotics followed by 52 Patients with 5 Antibiotics, 43 Patients with 6 Antibiotics while only 2 Patients were Prescribed with 1 Antibiotics which was the least one as depicted in Figure no 2.

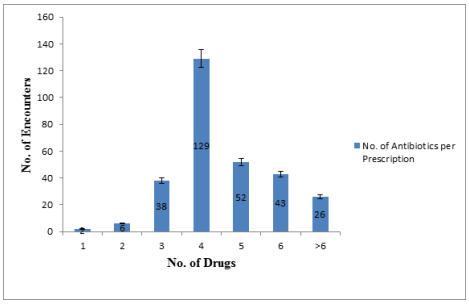

Figure no 2: No. of Antibiotics per Prescription

Average Antibiotics/Prescription - 3.04

Out of 296 Patients 291 Patients was prescribed with Tab. Ranitidine (98.31%) followed was observed that majority of Patients while 144 Patients were prescribed with Inj. Gentamicin which was the most commonly prescribed Antibiotic(48.64%) as shown in Table no 4.

Table no 4: Total Drugs Prescribed in different Surgeries

Name of drugs	No. of Patients	Percentage (%)
Tab. Ranitidine	291	98.31
Tab. Diclofenac	212	71.62
Inj. Metronidazole	198	66.89
Inj. Ranitidine	225	76.01
Inj. Dextrose with Normal Saline	272	91.89
Inj. Dextrose (5%)	263	88.85
Inj. Ringer Lactate	258	87.16
Inj. Gentamicin	144	48.64
Inj. Diclofenac	172	58.10
Inj. Ciprofloxacin	98	33.10
Inj. Ceftriaxone + Sulbactum	106	35.81
Tab. Metronidazole	52	17.56
Inj. Ceftriaxone	38	12.83
Tab. Cefixime	29	9.79
Inj.Ondansetron	119	40.20
Inj. Tramadol	22	7.43
Tab. Ciprofloxacin	40	13.51
Cap. Amoxicillin	44	14.86
Inj. Cefoperazone + Sulbactum	73	24.66
Tab. Brufen	35	11.82
Inj.Amoxicillin + Clavulanic Acid	21	7.09
Tab. Amoxicillin + Clavulanic Acid	42	14.18
Inj. Piperacillin + Tazobactum	09	3.04
Inj. Ampicillin	07	2.36
Total	2770	

Average Drugs/Prescription - 9.35

DISCUSSION

A drug utilization 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. We obtained data of 296 patients who underwent surgery in the obstetrics and gynecology department of a UPUMS, Saifai, Etawah, a tertiary care teaching hospital.

The present study mean age of patients undergoing surgery were among the age group 20-30 years, which is comparable to a study conducted by Pradeep sharma[10] and Heethal J et al[11] was contradictory

to the study carried out by Agarwal *et al*.[12] who showed that mean age was 33 years.

In present study, surgery for LSCS was very common and accounted for a total of 144(48.64%) patients. This finding was comparable with a study done by Agarwal *et al* [12] but lower than the findings of Prashanth P et al[13] which was 67.59%. In study conducted by Shah BK, Shah VN[14] it was 20% (n=69). This difference is because of the difference no of study population (n=123) . The second most common procedure done was Hysterectomy (17.56%). This finding is almost comparable with the findings of Prashanth P et al[13] (19.44%) and but higher than the findings of Shah BK, Shah VN[14] in which it was 11.30%. Other procedures with decreasing frequency were D & C (10.81%), emergency laparotomy (9.45%), miscellaneous (4.72%), cystectomy (4.05%), wound repair gap(2.70%).

The average number of drugs per encounter was 9.35 in our study with range of 2 to 12- >12. This is similar to the findings of Pradeep sharma[10] and slightly lower than the findings of Gyawali S et al[15] in which it was 10.60.

Most commonly prescribed drugs were tablet ranitidine, tablet diclofenac sodium, injection metronidazole, injection Ranitidine, injection ringer's lactate, injection dextrose with normal saline, injection dextrose, injection gentamincin, injection diclofenac, injection ciprofloxacin, injection ceftriaxone plus sulbactam, and tab. metronidazole.

In present study antibiotics were prescribed in all 296 encounters (100%). The purpose of antibiotic usage in post-operative patients was either prophylactic or to prevent post-operative infection at the surgical site.

The average number of antibiotics used in our studies was 3.04 which is very much similar to a study done by Bhushan et al.[16]. Our values were higher than a study done by Abula T et al[17] where it was 2.18 and lesser than study done by where it was Agarwal et al 5.30.[12]

The higher number of antibiotics per patient indicates that more and more antibiotics were used for prophylaxis purpose rather than definitive treatment purpose. It is used more as a blanket therapy to prevent any or all types of infection. This not only leads to the increased cost of therapy, but also tends to increase incidence of adverse drug reactions and to the selection of drug resistant bacterial strains The prescribers can minimize this by adhering to rational antibiotic utilization.

In the study average drug cost for LSCS and hysterectomy was 1366.40 INR and 1298.27 respectively. Average drug cost for antibiotic for LSCS and hysterectomy was 1122.67 INR and 1098.77 respectively. This was in accordance with a study done by Agarwal *et al* [12] but very high in comparison to study conducted by Shah BK, Shah VN[14] which was 419.42 and 217.9 INR respectively. This difference is due to use of different antibiotics and increase in cost of drugs over the period of time.

Percentage of encounters with an injection prescribed is 73.10% in our study. The primary purpose of NLEM is to promote rational use of medicines considering the three important aspects i.e. cost, safety and efficacy. Furthermore it promotes prescription by generic names, NLEM, India.[18] Postoperative state commonly requires the need for a very few classes of drugs. The most common amongst them are antimicrobials, analgesics, intravenous fluids, anti-emetics and antacids. All these drugs add a lot to the cost of therapy. In particular, the cost of injectable drugs is very high.

Direct non-medical cost i.e. cost incurred by patient in receiving medical care e.g. transportation to and from hospital and lodging of family members were not taken into account. Indirect cost like income loss of family due to absenteeism from work and intangible cost i.e. pain, worry, stress, anxiety due to the disease were also neglected as these costs are difficult to measure and variations are bound to occur when interpreted by different individual.

CONCLUSION

To sum up, all though, the present study provides valuable information about the utilization of drugs in the gynecological postoperative cases. Number of antimicrobials by intravenous route, are used to achieve quick plasma concentration and to avoid infection at surgical sites. This report is intended to be a step in the broader evaluation of safety and efficacy of drug prescription in surgical wards of a teaching hospital. Awareness to avoid Polypharmacy is required for cost effective treatment. It is essential to understand the general and specific interventions and management of various diseases, as these studies can inform health policy decision making and guide the investment and management at different levels of the health-care system to optimize the use of resources. Hence, this study was carried out with the objective to evaluate the drug utilization pattern in the post-operative patients in Obstetrics and Gynecology department of a tertiary care teaching hospital.

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