

Section

Pharmacology

Original

Article

A Drug Utilization Study in Post-operative Patients of IPD Obstetrics and Gynaecology

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ABSTRACT

Background: During delivery and postpartum period, antibacterial drugs play a very crucial role. The availability of these drugs can reduce maternal mortality. It is estimated that 350 000 maternal deaths happen worldwide. Infections are the major causes of maternal mortality. WHO reported that infections are responsible for 15% of the worldwide maternal mortality.

Methods: 148 total number of cases were included in this study. Patients aged more than 18 years. Post-operative patients till discharged, in Obstetrics and Gynaecology Department were included in this study. This study was conducted in the Department of Pharmacology in collaboration with Gynaecology. **Results:** In this study 148 total numbers of cases were included. Out of total cases 67.5% were belonged to 21-30 age group followed by 22.3% (31-40), 5.4% (>40), 4.7% (<20). In our study, we were seen 48.6% cases having LCSC surgery while 17.5% hysterectomy followed by 10.8% dilation & curettage, 10.1% TAH, 9.4% emergency laparotomy, 4.7% TAH with bilateral salpingo-oophorectomy, 4.0% cystectomy, 2.7% wound gap repair & total vaginal hysterectomy & 1.3% cervical biopsy.

Conclusions: These studies conclude that broader evaluation of safety and efficacy of drug prescription in surgical wards of a teaching hospital. Cost effective treatment is required to avoid polypharmacy.

Keywords: Drug Utilization Study, Rational use of Medicine

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INTRODUCTION

World wide, antibacterial agents are the most commonly used drugs. It contributes immensely to human health system. Though, the consumption of antibacterial agents is closely related to emergence of resistance in commensal and pathogenic species.¹ Over the past two-decade, antimicrobial drug use and cost have been increased. In India, the funds are limited healthcare. Hence, it becomes important to prescribe drug rationally.² the health of a pregnant woman is very important as both fetus and mother are at risk. In developing countries, researches with respect

to obstetrics & gynecology are limited. Few studies have shown a high prevalence of previously unrecognized morbidity, placing a heavy burden on women.³ In pharmaceutical market, drugs used in obstetrics & gynecology are highly selling drugs, but they are the least studied drugs in terms of drug utilization studies.

During delivery and postpartum period, antibacterial drugs play a very crucial role. The availability of these drugs can reduce maternal mortality. It is estimated that 350 000 maternal deaths happen worldwide. Infections are the major

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causes of maternal mortality.^{4,5} WHO reported that infections are responsible for 15% of the worldwide maternal mortality.⁶ Some other studies have reported that around 30% of the world maternal mortality cases belonged to infections.⁷ In India, the nation-wide maternal mortality rate (MMR) dropped considerably from 570 to 230 per 100 000 live births between 1990 and 2008. Though, the global average pace of the decline in MMR indicates that India will not reach the Millennium Development Goal (MDG) of 108 in 2015.⁸ Recently, it has been predicted that the MMR will be around 135 by 2015. Worldwide, most of the death cases occur during delivery and the postnatal period. One of the most important interventions to reduce maternal mortality is to increase the access to emergency obstetric care,⁹ because most of the cases are dependent on access to antibiotics.

METHODS

Study population: - 148 total number of cases were included in this study. Patients aged more than 18 years. Post-operative patients till discharged, in Obstetrics and Gynaecology Department were included in this study.

Study Area: -This study was conducted in the Department of Pharmacology in collaboration with Gynaecology.

Study Duration: -The duration of study was over a period of six month.

Sample collection:- 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.

Data Analysis:-Data were analyzed by using Microsoft excel

RESULTS

In this study 148 total numbers of cases were included. Out of total cases 67.5% were belonged to 21-30 age group followed by 22.3% (31-40), 5.4% (>40), 4.7% (<20). In our study, we were seen 48.6% cases having LCSC surgery while 17.5% hysterectomy followed by 10.8% dilation & curettage, 10.1% TAH, 9.4% emergency laparotomy, 4.7% TAH with bilateral salpingo-oophorectomy, 4.0% cystectomy, 2.7% wound gap repair & total vaginal hysterectomy & 1.3% cervical biopsy. In our study, we also seen 6 antibiotics prescription given in 14.1% cases, 5 in 17.5%, 43.2% in 4, 11.4 in 2 cases & 1 antibiotics in 0.6%. Different drug prescription was showing in table 4.

Table:-1 Distribution of cases according to age

Age	No of cases	Percentage
<20	7	4.7%
21-30	100	67.5%
31-40	33	22.3%
>40	8	5.4%
Total	148	100%

Table:-2 Distribution of cases according to types of surgery

Type of surgery	No of cases	Percentage
LSCS	72	48.6%
HYSTERECTOMY	26	17.5%
Total abdominal hysterectomy (TAH)	15	10.1%
Total Vaginal hysterectomy	4	2.7%
TAH with bilateral Salpingo-oophorectomy	7	4.7%
DILATION & CURRETEGE (D & C)	16	10.8%
EMERGENCY LAPROTOMY	14	9.4%
CYSTEOTOMY	6	4.0%
WOUND GAP REPAIR	4	2.7%
CERVICAL BIOPSY	2	1.3%
MYOMECTOMY	1	0.6%
MISCELLANEOUS	7	4.7%

Table:-3 Distribution of cases according to number of prescription of antibiotic

Number of antibiotic prescriptions	No of cases	Percentage
6	21	14.1%
5	26	17.5%
4	64	43.2%
2	17	11.4%
1	1	0.6%

DISCUSSION

A drug utilization studies are designed to review drug use and prescribing patterns of drug as per the guidelines. The present study consisted of 148 patients who underwent surgery in the obstetrics and gynecology department. The mean age of the patients of this study were 20-30 years, which is comparable to a study conducted by Pradeep sharma¹⁰ and Heethal J et al¹¹ besides this, a contradictory study was carried out by Agarwal *et al.*¹² they showed that mean age was 33 years. Surgery for LCSC was very common and accounted for a total of 72 patients in this study. These results were comparable with a study done by Agarwal *et al.*¹² but lesser than the findings of Prashanth P et al¹³ who found 67.59%. In contrary Shah BK, Shah VN¹⁴ observed that it was only 20% (n=69). The reason could be due to the difference in sample size of population (n=123). Hysterectomy (17.5%) was the second most common procedure in this study. This finding is almost similar with the findings of Prashanth P et al¹³ (19.44%). In contrary, Shah BK, Shah VN¹⁴ found 11.30%. some other procedures such as D & C (10.81%), emergency laparotomy (9.45%), miscellaneous (4.72%), cystectomy (4.05%), and wound repair gap (2.70%) have decreased frequency.

Table:-4 Distribution of cases according to number of prescription of antibiotic

Name of drug	Total no. of cases
Tab. Ranitidine	145
Tab. Diclofenac	106
Inj. Metronidazole	99
Inj. Ranitidine	112
Inj. Dextrose with Normal Saline	136
Inj. Dextrose (5%)	131
Inj. Ringer Lactate	129
Inj. Gentamicin	72
Inj. Diclofenac	86
Inj. Ciprofloxacin	49
Inj. Ceftriaxone + Sulbactam	53
Tab. Metronidazole	26
Inj. Ceftriaxone	19
Tab. Cefixime	14
Inj. Ondansetron	59
Inj. Tramadol	11
Tab. Ciprofloxacin	20
Cap. Amoxicillin	22
Inj. Cefoperazone + Sulbactam	36
Tab. Brufen	17
Inj. Amoxicillin + Clavulanic Acid	10
Tab. Amoxicillin + Clavulanic Acid	21
Inj. Piperacillin + Tazobactam	4
Inj. Ampicillin	3

Our study found that the average number of drugs per encounter was 9.35 with range of 2 to 12- >12. This finding is supported by Pradeep sharma¹⁰ and Gyawali S et al.¹⁵ Results also showed that the most commonly prescribed drugs were ranitidine, diclofenac sodium, metronidazole, Ranitidine, ringer's lactate, dextrose with normal saline, dextrose, gentamycin, diclofenac, ciprofloxacin, ceftriaxone plus sulbactam, and metronidazole. In this study antibiotics were prescribed in all 296 cases (100%). The main aim of antibiotic usage patients was either prophylactic or to prevent post-operative infection at the surgical site. The average number of antibiotics used in our study was 3.04. Bhushan et al also found the similar results.¹⁶

An injection is prescribed 73.10% in our study. The main purpose of NLEM is to encourage the rational use of medicines considering the three important aspects i.e. cost, safety and efficacy.

The above discussion showed that this study provides valuable information about the utilization of drugs in the gynecological postoperative cases. Antimicrobials by intravenous route are used to avoid infection at surgical sites. Therefore, 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.

CONCLUSION

These findings are helpful in the broader evaluation of safety and efficacy of drug prescription in surgical wards of a teaching hospital. Cost effective treatment is required to avoid polypharmacy.

REFERENCES

- Hawkey PM. The growing burden of antimicrobial resistance. *J Antimicrob Chemother.* 2008 Sep; 62 Suppl 1:i1-9.
- Shankar PR, Partha P, Dubey AK, Mishra P, Deshpande VY. Intensive Care Unit drug utilization in a teaching hospital in Nepal, Kathmandu *Univ Med J* 2005; 3:130-7.
- International Institute for population Sciences (IIPS) and Macro International 2007. National Family Health Survey (NFHS-3), 2005-06: Mumbai India: (I): IIPS.
- World Health Organization: The evolving threat of antimicrobial resistance – options for action. 2012, Geneva: Switzerland: World Health Organization
- Potharajua H, Kabra SG: Prescription audit of outpatient attendees of secondary level governmental hospitals in Maharashtra. *Indian J Pharmacol.* 2011, 43: 150-156. 10.4103/0253-7613.77350.
- De Costa A, Bhartiya S, Eltayb A, Nandeswar S, Diwan VK: Patterns of drug use in the public sector primary health centers of Bhopal district. *Pharm World Sci.* 2008, 30: 584-589. 10.1007/s11096-008-9215-6.
- Kumar R, Indira K, Rizvi A, Rizvi T, Jeyaseelan L: Antibiotic prescribing practices in primary and secondary health care facilities in Uttar Pradesh, India. *J clin Pharm Ther.* 2008, 33: 625-634. 10.1111/j.1365-2710.2008.00960.x.
- International Institute for Population Sciences (IIPS): District Level Household and Facility Survey (DLHS-3), 2007–08. 2010, India: Madhya Pradesh: Mumbai: IIPS
- Pathak A, Mahadik K, Dhaneria SP, Sharma A, Eriksson B, Lundborg CS: Antibiotic prescribing in outpatients: Hospital and seasonal variations in Ujjain, India. *Scand J Infect Dis.* 2011, 43: 479-488. 10.3109/00366548.2011.554854.
- Pradeep Sharma. Use of Antimicrobial Agents in Post-operative Patients in Obstetrics and Gynaecology Ward: A Prospective Study. *Int J Med Res Prof.* 2017 Sept; 3(5); 19-22.
- Heethal J, Sarala N, Kumar TN, Hemalatha M. Pattern of antimicrobial use in caesarean section in a tertiary care hospital in rural south India. *Int J Pharm Biomed Res* 2010;1:57- 61.
- Agrawal JM, Patel NM. Drug utilization study in postoperative patients in obstetrics and gynecology ward of a tertiary care teaching hospital. *J Clin Exp Res* 2014;2(2):103-9.
- Prashanth P et al. Trends in prescribing antimicrobials in post-operative wards in a tertiary care hospital. *Drug Invention Today* 2011;3:301-4.
- Shah BK, Shah VN. Antimicrobial use by the department of obstetrics and gynecology of a tertiary care hospital: Analysis for rationality and other aspects. *J Obstet Gynecol Ind* 2004;54:387-92.
- Gyawali S, Shankar PR, Saha A, Mohan L. Study of prescription of injectable drugs and intravenous fluids to inpatients in a teaching hospital in Western Nepal. *MJM* 2009;12:13-20.
- Bhushan et al. European journal of pharmaceutical and medical research. Drug utilisation study in gynaecological post operative cases: a retrospective study. *ejpmr*, 2017, 4(04), 418-423.