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Original Research Article

The study of antibiotics prescription pattern in pre, intra and post operative period to patients who later developed surgical site infections in a tertiary care centre

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ABSTRACT

Background: AMR has emerged as major public health problem all over world which can be controlled in paying great attention to judicious use of them. In 2012, ICMR started ASP to reduce SSIs by doing right antimicrobial prophylaxis and emphasised to prevent drug resistance. We aimed to see pattern of antibiotics prescribed in pre, intra and post-operative period to patients, who later developed SSIs.
Methods: After local IEC-DHR approval, data is collected using retrospective descriptive type study Design. All patients' medical records who undergone surgeries performed in general surgery, obstetrics-gynaecology, Orthopaedics departments and later developed SSIs in post-operative period are included. Duration of study is 6 months. Only antimicrobials used are recorded and data is analysed using MS Excel.
Results: In total 71 case records, females found more. 19-30 years of age patients are more. Antimicrobials of Third generation cephalosporins are used most frequently in Pre, Intra and post-op period. Inj. Ceftriaxone was prescribed more commonly as 'Monocef'. Half of Antimicrobials are prescribed with Generic names and match DDD recommended by WHO. Average duration of post-operative treatment was 12-13 days. Antibiotics were prescribed till discharge to all.
Conclusions: In the study, case records of patients who later developed surgical site infections are studied to know demographic profile. Prescription pattern is most commonly polypharmacy and FDCs were preferred. I.V. was used more than P.O. Treatment modifications are done in 1/4th cases after microbiological reports of swabs of infected sites and this need to be increased.

Keywords: Antibiotics, Antibiotic prescriptions, Surgical site infections

INTRODUCTION

Antimicrobial resistance (AMR) has emerged as a major public health problem all over the world. In 2006, Centres for disease control and prevention (CDC) guideline for "Management of multi-drug-resistant organism in health care setting" stated that emergence of multi-drug resistance can be controlled in paying great attention to judicious antimicrobial use. Similarly, in 2009, CDC launched "get smart for healthcare campaign" to promote improved use of antibiotic in In-patient settings.

In 2015, the White House published the National action plan for combating antibiotic-resistant bacteria with five main goals to curb antibiotic resistance, strengthen antimicrobial resistance surveillance, advance development of rapid diagnostics, accelerate research targeting novel therapeutics and collaborate with other countries to strengthen prevention, development and surveillance efforts.[1]

Surgical site infections (SSIs) are the second most common cause of nosocomial infections. Administration of prophylactic antibiotics in certain surgical procedures can decrease post-operative infections, decrease the length of hospital stay and reduce the overall cost of care. In 2012, Indian council of medical research (ICMR) started antibiotic stewardship program (ASP) to preserve the effectiveness of the drugs and to maximize hospital infection control practices to limit this spread of resistance to antibiotics. Nowadays, the situation in the development and approval of newer antimicrobial agent is not encouraging. Centre of health protection of the department of health rolled out "the antibiotic stewardship programme in primary care," aiming to optimize the use of antibiotics by providing evidence-based antibiotic prescription guidance for common infections in community for doctors and healthcare professionals, as reference.[1] Recent work by the world health organization (WHO) "clean care is safer care programme" shows that SSI is the most surveyed and frequent type of healthcare associated infections (HAI).[2]

Appropriate prescription of antibiotics is seen as one of the most effective ways to reduce SSIs. Previous studies and organizations have suggested that antibiotics should ideally be administered 60 min before the first incision, with a second dose potentially administered for longer procedures, i.e., longer than 4 hours.[3] More recently, the WHO AWaRe guidance book (2022) has suggested that antibiotic prophylaxis should be administered 120 min or less before starting surgery as a single dose and not continued after surgery if proper hygienic care is taken.

Antimicrobials are used in surgical wards most commonly in post-operative period and prophylactically in pre and intra operative period.[4,5] Antibiotic prophylaxis in pre and intra-operative period is mandatory to prevent and minimize post-operative SSIs.[3,5] But, despite the surgical prophylaxis, Inappropriate and excessive use of antibiotics for this purpose leads to increase in nosocomial infections, hospital costs, ineffectiveness and/or decline in susceptibility of bacteria, thus resistance to antibiotics and, eventually burden on health care resources and ultimately this can be great threat to modern medicine.[1,3,4,6] Inappropriate antibiotics prescribed for unnecessary indications, in the form of wrong doses, variable durations, not reviewing microbiological reports, choosing wrong type of class of antibiotic suitable for surgeries. Appropriate use of antibiotics also enhances rate of wound healing by providing sterile environment around the surgical sites.[5] Obese people are more likely to have SSIs than non-obese, hence choice of antimicrobials according to patients' condition is also important.[7]

Goal of antimicrobials is not only to sterilize tissues, but also to reduce intra-operative contamination in operating settings. Prophylactic antibiotics are still used subjectively by physicians as no single drug of choice is yet found.[8] locally published studies show antibiotics are second most prescribed agents after analgesics.[9] Prescriptions are an indirect measure of antibiotics consumption and not a measure of rate of resistance emergence which is multifactorial.[10]

Lacunae and rationale of study

However, there is currently limited available research study done regarding the prescription of antibiotics for surgical prophylaxis among various hospitals in India. Prescription audit and guidelines for judicious use of antibiotics can show better impact not only on SSIs and other infectious diseases, but also on appropriate use of antibiotics. Also, in future, References and evidences can be provided to support such studies related to antimicrobial resistance and focusing on its usage in pre, intra and post-operative periods. It is always beneficial to be aware of current situation of antibiotic prescription pattern especially reducing SSIs.

Aim and objectives

Keeping this scenario in mind, we aimed to study pattern of Antibiotics prescribed in pre, intra, post-operative period to patients who later developed surgical site infections in tertiary care centre, With following objectives. To study the prescription pattern of antibiotics used for patients before, during and after surgery and who later found with surgical site infections in tertiary care centre. To calculate the defined daily dose (DDD) of drugs according to WHO's ATC (Anatomical therapeutic chemical classification) and DDD system. To measure compliance of antibiotic drugs, use according to Antibiotic Stewardship programme to prevent surgical site infections.

METHODS

Study design, place and setting

Retrospective descriptive type of study design is used and we conducted study in a tertiary care centre of government of Maharashtra named Swami Ramanand Teerth Rural Government Medical College and Hospital, Ambajogai, Dist. Beed, Maharashtra, India, for duration of 6 months from January 2023 to June 2023. This hospital is Asia's 1st rural tertiary care centre and chosen as it is very well-known teaching institute especially for high quality, most advanced surgical treatments and for convenience. A total of 71 medical case records of patients meeting the inclusion criteria were included in the study.

Inclusion and exclusion criteria

Medical records of all patients who undergone surgeries performed in departments of general surgery, obstetrics and gynaecology, orthopaedics and later developed surgical site infections in post-operative period are included. These wards were carefully chosen to provide the maximum number of case records required of above patients.

Definitions

Definition of antibiotic stewardship is "Coordinated intervention is designed to improve and measure the appropriate use of antimicrobial agents, by promoting the selection of optimal antimicrobial drug regimen including dosing, duration of therapy and route of administration" (SHEA, IDSA, PIDS – April 2012).[1]

Defined daily dose (DDD) is defined by WHO an assumed average maintenance dose in grams per day for a drug used for its main indication in adults. It is antibiotic use in hospitals by aggregating the total number of grams of each antibiotic purchased, dispensed or administered during a period of interest divided by WHO assigned DDD. The World Health Organization publishes defined daily dose values for nearly all antimicrobials with the ATC Code drug classification system. DDD estimates are not appropriate for children and those with reduced drug excretion such as renal impairment.[11]

SSIs are defined as infections occurring up to 90 days after surgery and affecting either the incision or deep tissue at the operation site.[1,3]

Data collection process and statistical analysis

Data is collected using prescription sheets as data collecting tool and only antimicrobials used during hospitalization are recorded. The handwritten prescriptions sheets of surgeons are evaluated in details for socio-demographic profile viz age, gender and dose, formulation, duration and frequency of antibiotics use. WHO core indicators for drug utilization study are assessed which are percentage of drugs prescribed by generic name out of total drugs prescribed.[11] Percentage of oral antibiotics prescribed out of total antibiotics prescribed. Percentage of injections prescribed out of total antibiotics prescribed.

The compliance of antibiotics prescribed is checked using ASP measures like monitoring of antibiotic use and restriction, no unnecessary prescription by better diagnosis, no inappropriate prescription by observing dose, route of administration, duration.[1]

Data collected is entered and analyzed in latest version Microsoft Excel software using appropriate statistical methods. Descriptive statistics is used to summarize the patient socio-demographic and clinical data.

Ethical considerations and approval

The study was reviewed by the Institutional Ethics Committee of DHR (Department of Health Research of India) of Swami Ramanand Teerth Rural Government Medical College and Hospital, Ambajogai, Dist. Beed, Maharashtra, India. The Study is commenced after obtaining approval of the above Institutional ethics committee of DHR vide letter no. S.R.T.R.G.M.C./Pharma/IEC-DHR/64/2023 Dated: 08/08/2023.

RESULTS

Socio-demographic characteristics

Total 71 medical case records of patients are found as per inclusion criteria i.e., patients who have undergone surgeries performed in departments of general surgery, obstetrics and gynaecology, orthopaedics and later developed surgical site infections in post-operative period. Out of them, females were 39 and remaining 32 were male. Patients' case records are tabulated in an age wise classification of 6 groups and department wise as per Tables 1 and 2 respectively.

Prescription indicators

Total 234 antibiotics were prescribed to 71 patients during their hospital stay. Out of these 118 antibiotics were prescribed with generic names and remaining 116 with brand names. 186 antibiotics were given in injectable dosage form, while 45 antibiotics in tablets and one drug each in as capsule, ointment and syrup form. Thus, 186 antibiotics were given through parenteral route while 47 no. of drugs through oral and that 1 ointment was locally applied. 181 antibiotics were prescribed twice in a day, while 49 for thrice daily and remaining 4 for once a day. 118 of total prescribed antibiotics match with DDD recommended by WHO remaining 116 does not match. It is observed that Average duration of hospital stay was 12-13 days with minimum 3 days to maximum 60 days of stay of some patients and all patients are prescribed antibiotics till their last day of hospital stay.

In the Table 3, Various prescription parameters/indicators are assessed and the antibiotic drugs used out of total antibiotics are shown with percentages.

Antibiotic usage

In overall pre, intra and post-operative period and all wards, antibiotics of 3rd generation cephalosporins are prescribed for 61 no of times followed by penicillin with b-lactamase inhibitors which were used for 52 times and as for other groups, nitroimidazoles (metronidazole) are prescribed for 49 times, oxazolidinone (linezolid) for 22 times, aminoglycosides for 17 times, fluoroquinolones (ciprofloxacin) for 15 times, carbapenems (meropenem) for 9 times, macrolides (azithromycin) thrice, tetracyclines twice (doxycycline once and tetracycline once) and penicillin only (amoxicillin) and polymyxin (colistin) are used once. Among 3rd generation cephalosporins, ceftriaxone was prescribed 39 no. of times followed by cefotaxime for 22 times. Among penicillin with b-lactamase inhibitors, amoxicillin with clavulanic acid (clavam) was prescribed 36 no. of times followed by piperacillin with tazobactam (piptaz) for 16 times. among aminoglycosides, gentamycin was prescribed 10 no. of times followed by amikacin for 7 times.

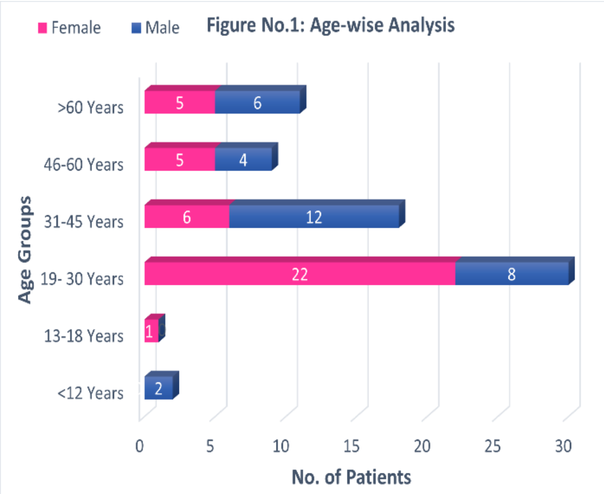

Figure 1: Age wise analysis.

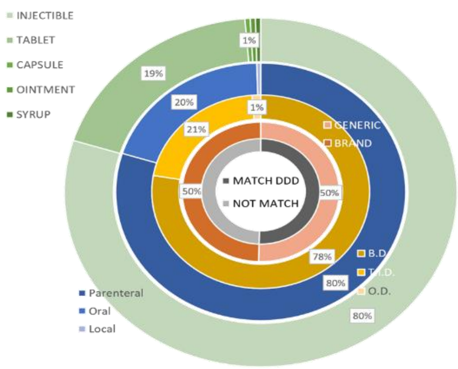

Figure 2: Prescription indicators.

In the Table 4, antibiotics prescribed in overall pre, intra and post-operative period and all wards, are shown according to classes of antibiotics with frequency of usage of each class with percentages, followed by each drug according to WHO ATC classification code and recommended DDD with observed DDD (in grams) followed by their individual frequency of usage with percentages.

Table 1: Socio-demographic data, age group wise classification and gender wise no. of patients with total summarization.

Sr. No.	Age groups (in years)	Female	Male	Total
1	≤12	0	2	2
2	13-18	1	0	1
3	19- 30	22	8	30
4	31-45	6	12	18
5	46-60	5	4	9
6	>60	5	6	11
Total		39	32	71

Table 2: Socio-demographic data showing gender wise no. of patients from different wards with total summarization.

Dept.	Female	Male	Total
Surgery	10	31	41
OBGY	28	NA	28
Ortho	1	1	2
Total	39	32	71

Table 3: Prescription indicators.

Prescription indicators assessed	Out of total 234 no. of antibiotics	%
Format of prescribed antibiotics		
Generic names	118	50.43
Brand names	116	49.57
Dosage form of antibiotics		
Injectables	186	79.48
Tablets	45	19.23
Capsules	1	0.43
Syrup	1	0.43
Ointments	1	0.43

Continued.

Prescription indicators assessed	Out of total 234 no. of antibiotics	%
Route of antibiotic drugs administration		
Parenteral	186	79.48
Oral	47	20.09
Local	1	0.43
Frequency of antibiotics taken per day		
Twice daily	181	77.35
Thrice daily	49	20.94
Once daily	4	1.71
Compliance with defined daily doses by WHO		
Match	118	50.43
Do not match	116	49.57

Table 4: Antibiotic usage.

Sr. No	Class	Used no. of times	Use (%)	Drug	ATC code	WHO DDD	Observed DDD	Used no. of times	Use (%)
1	Tetracyclines	2	0.86	Doxycycline	J01AA02	0.1	0.2	1	0.43
				Tetracycline	J01AA07	1	1	1	0.43
2	Penicillin	1	0.43	Amoxicillin	J01CA04	1.5	1	1	0.43
3	Penicillin+B lactamase inhibitors	52	22.41	Clavam I.V.	J01CR02	3	2.4	19	8.19
				Clavam Tab		1.5	1.25	17	7.33
				Piptaz	J01CR05	14	9	16	6.9
4	Cephalosporin	61	26.29	Cefotaxime	J01DD01	4	2	22	9.48
				Ceftriaxone	J01DD04	2	2	39	16.81
5	Carbapenem	9	3.87	Meropenem	J01DH02	3	2	9	3.88
6	Macrolides	3	1.29	Azithromycin	J01FA10	0.3	0.5	3	1.29
7	Aminoglycosides	17	7.33	Gentamycin	J01GB03	0.24	0.16	10	4.31
				Amikacin	J01GB06	1	1	7	3.01
8	Fluoroquinolone	15	6.47	Cipro I.V.	J01MA02	0.8	1	11	4.74
				Cipro Tab		1	1	4	1.72
9	Polymyxin	1	0.43	Colistin	J01XB01	9	6	1	0.43
10	Nitroimidazole	49	21.12	Metro I.V.	J01XD01	1.5	1.5	47	20.26
				Metro Tab	P01AB01	2	1	2	0.86
11	Oxazolidinone	22	9.49	Linezolid	J01XX08	1.2	1.2	22	9.48

DISCUSSION

The present retrospective study was conducted to evaluate the antibiotic prescription pattern among patients who developed SSIs following surgeries. The study is the first of its kind from our institution, which serves as a rural tertiary care centre in India. The study provides a baseline assessment of antibiotic prescribing patterns among patients who developed SSIs, which can be used for future interventions and assessments. The use of WHO DDD indicators, generic prescribing assessment and ASP compliance evaluation adds robustness to our findings and allows for comparison with other institutions and countries

From the data collected, it is found that out of 71 patients who developed SSIs, females (54.9%) outnumbered males (45.1%). This finding is consistent with the study by Rahul S et al, (2023), who also reported a female preponderance in their surgical population.[4] However, Saleem et al reported a male predominance in their surgical cohort, which could be attributed to differences in the type of surgeries performed and geographical variations.[3] The higher number of female patients in our study can be explained by the inclusion of the Obstetrics and Gynaecology department, which contributed 28 cases (39.4%), primarily comprising obstetrical and gynecological procedures. On analyzing data age group wise, the age group of 19-30 years (42.3%) was most commonly affected, followed by 31-45 years (25.4%). This finding aligns with the study by Bikash Bahadur Rayamajhi et al, who reported a similar age distribution in their surgical patient population.[5] The predominance of younger age groups may reflect the demographic profile of patients seeking care at our rural tertiary centre, which caters to a relatively younger population.as depicted in Figure 1.

Authors point of view about this analysis is solely accounting socio-demographic profile of patients related to this study and does not depict any exact relation of Surgical site infections to their age. While studying prescriptions of these patients, our analysis revealed that 50.43% of antibiotics were prescribed by generic names, while 49.57% were prescribed as brand names. This is commendable and higher than findings from Bashar MA et al, who reported only 38% generic prescribing in their surgical setting.[6] The WHO recommends that drugs should be prescribed by generic names to reduce healthcare costs and promote rational prescribing. The relatively good compliance with generic prescribing in our institution suggests that the ASP guidelines implemented by ICMR in 2012 are beginning to show positive effects.

Injectable formulations constituted the majority (79.48%) of antibiotic prescriptions, compared to oral formulations (20.09%). This finding is consistent with Rahul et al who reported that 72% of antibiotics were administered parenterally in post-surgical patients.[4] Similarly, Neha Saini et al, observed a predominance of injectable antibiotics in hospital settings.[10] The preference for the parenteral route is understandable in the immediate post-operative period when oral intake may be compromised and the need for rapid therapeutic effect is paramount. However, the high proportion of IV antibiotics should be reviewed periodically to encourage early conversion to oral therapy when clinically feasible, as recommended by ASP guidelines.[1]

The frequency of twice-daily dosing was most common (77.35%), followed by thrice-daily (20.94%). This pattern aligns with the pharmacokinetic properties of commonly used antibiotics like ceftriaxone and metronidazole. Han Gyu Cha et al, reported similar dosing frequencies in their surgical prophylaxis study, indicating a standard practice pattern across different settings.[8]

One of the measures of antibiotic stewardship programme, compliance of doses of antibiotics with reference to WHO Daily Defined Dose system, only 50.43% of antibiotic prescriptions matched the WHO-recommended DDD, while 49.57% did not. Among those not matching, 41% were underdosed and 6.5% were overdosed. This represents a significant area for improvement. Underdosing can lead to therapeutic failure and the emergence of resistance, while overdosing increases the risk of adverse effects and unnecessary healthcare costs. Saleem et al reported similar findings of suboptimal DDD compliance in their surgical patient cohort.[3] The WHO DDD system is designed to standardize antibiotic consumption measurements across institutions and our study highlights the need for regular DDD monitoring and dose optimization. (Table 4). All this observation can be best demonstrated pictorially in Figure 2.

Among all antibiotics analyzed from prescriptions of all these records shows that Third-generation cephalosporins were the most frequently prescribed antibiotics (26.29%), with ceftriaxone being the most common (16.81%) among them, followed by cefotaxime (9.48%). This observation is consistent with multiple Indian studies. Rahul et al found third-generation cephalosporins to be the most prescribed class in post-surgical patients.[4] Saleem et al also reported a predominance of cephalosporins in their surgical wound patients.[3] The widespread use of ceftriaxone, particularly as 'Monocef' (a brand name), reflects its favourable pharmacokinetic profile, once-daily dosing convenience and broad-spectrum coverage. However, the high usage of ceftriaxone, which belongs to the WHO 'Watch' group antibiotics, raises concerns about antimicrobial resistance development. Penicillin with beta-lactamase inhibitors (22.41%) was the second most common class, with amoxicillin-clavulanic acid (Clavam) being prescribed most frequently (15.52% combined for IV and oral). This preference aligns with the findings of Bashar et al who reported that beta-lactamase inhibitor combinations are increasingly used in surgical settings due to their broader coverage against resistant organisms.[6]

Nitroimidazoles (metronidazole, 21.12%) were the third most common class, which is consistent with its use as an anti-anaerobic agent in surgical prophylaxis and treatment. Rayamajhi et al similarly observed frequent metronidazole use in surgical patients in Nepal.[5] Linezolid (9.48%) and carbapenems (meropenem, 3.87%) were used less frequently but were still present. The use of these broad-spectrum antibiotics, particularly carbapenems, in a tertiary care setting indicates either the severity of infections or the presence of resistant organisms. Saleem et al also reported the use of carbapenems in complicated surgical wound infections.[3] The use of colistin (0.43%) in one case suggests the presence of multidrug-resistant organisms, reflecting the growing AMR problem in healthcare settings.

The average duration of post-operative antibiotic treatment was 12-13 days, with all patients receiving antibiotics until discharge. This duration is notably longer than recommended by international guidelines. The WHO AWaRe guidance book (2022) recommends that surgical antibiotic prophylaxis should be administered as a single dose and should not be continued after surgery if proper hygienic care is taken.[1] Pak et al observed that prolonged post-operative antibiotic use is a common problem in many settings, contributing to the development of antimicrobial resistance.[7] Saleem et al reported that extended post-operative antibiotic courses were associated with higher rates of adverse events and increased costs.[3]

The extended duration in the study may reflect a combination of factors, including the severity of infections, concerns about wound healing, the lack of rapid microbiological diagnosis and the absence of clear de-escalation protocols. Bashar et al demonstrated that implementing an antibiotic stewardship programme in a surgical setting significantly reduced the duration of post-operative antibiotic therapy without increasing adverse outcomes.[6]

Only one-quarter of cases (approximately 25%) had treatment modifications based on microbiological reports of wound swabs. This is a concerning finding, as it suggests that empirical therapy continues for a prolonged period without de-escalation based on culture sensitivity results. Rahul et al reported a similar pattern, with only 30% of treatment modifications based on microbiological reports.[4] Rayamajhi et al emphasized that culture-guided antibiotic therapy should be the standard of care and the percentage of such modifications needs to be increased substantially to optimize antibiotic use and reduce the emergence of resistance.[5] The low rate of modification could be attributed to delays in obtaining culture reports, reluctance to de-escalate therapy or inadequate communication between microbiology and clinical departments.

The ICMR ASP emphasizes the importance of appropriate antimicrobial prophylaxis to reduce SSIs. Our study identified several areas where adherence to ASP principles could be improved.

Timing of prophylaxis

Authors noted that intra-operative prophylaxis was initiated at the time of anesthesia induction, which is in line with recommendations. However, we did not assess the timing of the first antibiotic dose before surgical incision, which is a significant limitation.

Duration of prophylaxis

The extended post-operative prophylaxis beyond 24-48 hours, as observed in our study, is contrary to ASP recommendations.[1]

Choice of antibiotics

The predominant use of ceftriaxone (a 'Watch' group antibiotic) for prophylaxis is concerning. Guidelines recommend using first- or second-generation cephalosporins (e.g., cefazolin) for most surgical procedures unless there are specific indications for broader coverage.[1]

Dosing compliance

The suboptimal DDD compliance indicates a need for dose standardization and monitoring.

Comparing the findings with other studies reveals both similarities and differences. ICMR guidelines (2018) emphasize the importance of appropriate antibiotic use to prevent SSIs.[1] The study shows that while generic prescribing is improving, other aspects of rational use (duration, dosing, choice) require further attention. WHO guidelines (2018) recommend single-dose prophylaxis and discontinuation after surgery.[2]

The study found that most patients received antibiotics for extended periods, highlighting a significant gap between guidelines and practice. Saleem et al in their international study reported that antibiotic utilization patterns varied significantly across different wound types and recommended the development of local guidelines to address these variations.[3] Bashar et al demonstrated that antibiotic stewardship programmes in surgical settings significantly improve prescribing practices.[6] The study's findings reinforce the need for structured ASP implementation in our institution.

Pak et al conducted a study on prophylactic antibiotic prescribing in elective surgery and found that adherence to guidelines was poor in many centers, particularly regarding the duration of prophylaxis.[7] Their observations align with the findings of prolonged post-operative antibiotic use. Rayamajhi et al in Nepal reported that many surgical patients received antibiotics for inappropriate durations and that de-escalation based on culture reports was uncommon, similar to the observations.[5]

Saini et al highlighted that misuse of antibiotics is a potential threat in Indian healthcare settings.[10] They emphasized the need for education of healthcare professionals and patients about appropriate antibiotic use, a message that remains relevant based on the findings. Based on the findings, we recommend the following measures to improve antibiotic prescribing and reduce SSIs.

Regular prescription audits should be conducted to monitor antibiotic use patterns and identify areas for improvement. Development and implementation of institutional antibiotic guidelines based on local microbiological data (hospital antibiogram) and the WHO AWaRe classification. Enhanced training of surgeons and residents on ASP principles, including appropriate selection, dosing and duration of antibiotic therapy. Establishment of a multidisciplinary ASP team comprising infectious disease specialists, clinical pharmacologists, microbiologists and pharmacists to conduct regular ward rounds and review antibiotic prescriptions.

Improvement of microbiological services to ensure timely culture and sensitivity reports, enabling early de-escalation of therapy. Development of a structured antibiotic de-escalation protocol to reduce the duration of post-operative antibiotic therapy without compromising patient outcomes. Education of patients and healthcare professionals about the risks of inappropriate antibiotic use and the importance of adherence to prescribed regimens.

CONCLUSION

In the study, case records of patients who later developed surgical site infections are studied to know their Socio-demographic profile viz, age, gender, hospitalized wards. Prescription pattern is most commonly polypharmacy and fixed drug combinations were preferred. I.V. route of administration of drugs was used more than per oral route. Treatment modifications are done in only one fourth cases after microbiological reports of swabs of infected sites and this percentage need to be increased. All the patients received antibiotics till discharge. Also, initiation of intra-operative prophylaxis of antibiotics is at the time of anesthesia induction. It is observed in some cases that there was too long antibiotic coverage in post-operative period. In future, we will continue to monitor the situation further and will take more patients in consideration.

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