Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 4, 2021, Pages. 5848 - 5857
Received 05 March 2021; Accepted 01 April 2021.

Analysis on the Antibiotics in Post Operation for Patients Depending on WHO Prescribing Indicators

[1]Dr.L.Niharika, [2*]Mr Nageswara Rao, [3]Dr. ShamimunNisa

[1]Department of SPM, [2,3]Department of Radiology, [1,2,3]Konaseema Institute of medical Sciences Research Foundation, Amalapuram, Andhra Pradesh, India

Abstract

The aim of this study is to assess the drug use pattern of antibiotics in post-operative patients using WHO prescribing indicators**.** It was a prospective and observational study was carried out in post-operative patients at Manipal Hospitals, Vijayawada. During the study period, we have collected a total number of 200 cases under surgical department. We found that most of the affected people were females with 56% (n= 112).Most of the people were under the age group of 40-60 years with 36% (n=72). The most common disease affected under the department is orthopaedics (29.5%). Drugs prescribed during post-operative stage were Antibiotics (100%), Analgesics (100%). Cephalosporin antibiotics were found to be the most frequently prescribed (89%). In analgesics NSAIDS and Non-Opioid analgesics were found to be the most frequently prescribed drugs with (72%) and (68.5%). In antiemetics Serotonin antagonists 48 (24%) was most frequently prescribed. Under the antiulcer drugs PPI's (69%) followed by H2 blockers (17%), and Ulcer-protective agents (5%).No.of antibiotics per prescription were 3 antibiotics 77(38.5%). Total no of drugs per prescriptions were 4-6(8.5%), followed by 7-9 drugs (70%) etc. A total of 200 post-operative cases were collected. This report is intended to be a step in the broader evaluation safety and efficacy of drug prescription. This study shows the usage of prescription pattern of drugs in post-operative patients. This study shows that poly pharmacy was found to be very common which is mostly observed in case of antibiotics and lack of generic drug prescribing was observed. Drug prescribing from essential drug list (EDL) was low.

Keywords: Drug Utilization Review, Antibiotics, WHO indicators, surgical department, Polypharmacy

1 .Introduction

Drug usage Reviews (DUR) What's more named as drug utilization evaluation (DUE) or prescription usage assessments (MUE), are delineated Likewise a authorized, structured, present Audit for human services supplier prescribing, drug specialist dispensing, also tolerant utilization of prescription. DUE's involve a complete review of patients' prescription data before, during, and once dispensing to form positive acceptable medication deciding and positive patient outcomes[1]. The overuse, underuse or

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 4, 2021, Pages. 5848 - 5857
Received 05 March 2021; Accepted 01 April 2021.

misuse of medicines ends up in wastage of scarce resources and widespread health hazards. For example irrational usage of drugs include: use of multiple drug therapy per prescription; over usage of antibiotics, usually in over dose or under dose quantity, for non-bacterial infections (i.eviral, parasitic, fungi); Over-use about injections once oral formulations might make extra appropriate; disappointment to talk clinched alongside understanding with clinical guidelines; unseemly self- medication, by and large from claiming prescription-only medicines; non-adherence with dosing regimes [2].hose vital point of medication use exploration will be with be encourage normal utilization of pills in the number. A developing number from claiming pharmaceutical items are accessible in the planet showcase Furthermore there need been a build both in the utilization of the medications Also done consumption looking into them [3]. Those standards from claiming surgical prophylaxis bring been made over quite some time. Determination of antibacterial agenize for prophylaxis ought to a chance to be In light of its movement against foreseen microscopic organisms at the particular surgical webpage [4]. Appropriately timed exact dosage of preoperative antibacterial agenize lessens the frequency from claiming surgical webpage infection5. Creating nations bring constrained stores accessible for social insurance Furthermore medications Also it gets to be extremely critical to prescribe drug rationally something like that that the accessible subsidizes might be used optimally6. Postoperative use about medications may be a whole lot stamped. Medications need aid endorsed to the reason for analgesia, counteractive action for infection, queasiness and vomiting, will uphold those hemodynamic status [7]. Postoperative usage for medications may be a whole lot checked. Medications are endorsed to the reason for analgesia, aversion about infection, queasiness Also vomiting, will support those haemodynamic status [8].The purpose of antibacterial prophylaxis is to prevent postoperative infections, which are the primary cause of morbidity and mortality in patients undergoing surgery today. Aseptic techniques alone may decrease, but do not completely eliminate bacterial contamination of the surgical field. Therefore, the need for antibacterial agent to supplement aseptic technique becomes more widely accepted[9]. Evaluation about pill use examples for the globe wellbeing association medication use indicators will be getting to be an ever increasing amount necessary should push normal medication regardless use to creating nations [10-11]. In the recent past exercises are began Push normal medication regardless use, an endeavor ought to will make made should illustrate Furthermore quantify the circumstances. A few well-established review methodologies would on the business to this motivation. You quit offering on that one evaluation technique might make a prescribing Furthermore tolerant mind overview utilizing the planet wellbeing association clinic medication regardless use indicators. These quantitative indicators need aid at present totally acknowledged similarly as a around the world standard to detriment ID number Furthermore need aid used for in thirty creating nations [12].

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 4, 2021, Pages. 5848 - 5857
Received 05 March 2021; Accepted 01 April 2021.

Methodology

Study Site& design: A hospital based non-interventional, prospective and observational study was carried out in post-operative patients conducted in Manipal super speciality Hospital, Vijayawada, Andhra Pradesh ,India.

Sample size& study duration: A total of 200 patients from the in-patient wards of department of general surgery over a period of 6 months from june to November2018

Source of data: The patient's demographical data, clinical data, therapeutics data and various other relevant and necessary data were obtained every day from the clinical assessment records, including medical records and other relevant information sources are documented, including laboratory investigations.

Inclusion criteria: All the patients who have been admitted in General surgery wards in manipal hospital2. Any age3. Patients of either sex4. Patients who had been through a surgery5. Patients undergoing re-operation

Exclusion criteria: Whatever tolerant who dies post-operatively in the recent past being discharged2. Patients who absconded / released against medicinal advice3. Tolerant alluded with higher center. 4. All pregnant and lactating patients5. Patients who are not willing to participate in the study.

Study procedure**:** A suitable data collection form was designed to collect all the necessary and relevant information. A personal visit was made to all the patients who were included in the study to collect any further information. During the treatment the enrolled patients were evaluated clinically every day to assess the clinical outcome.

Data Analysis

Prescriptions were analyze for WFO indicator

a. Percentage of encounters with an injection prescribed
b. Percentage of drugs prescribed by generic brand
c. Percentage of drugs prescribed from essential drug list
d. Average number of drugs per prescription

3. RESULTS

Table.1. Gender Distribution

Gender	Number Of Patient	Percentage %
Male	88	44
Female	112	56
Total	200	100

Out of 200 patients studied, the largest proportion of patients were female 112(56%)

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 4, 2021, Pages. 5848 - 5857
Received 05 March 2021; Accepted 01 April 2021.

Table 2: Age Distribution

Age in years	Number of patients	Percentage %
<20	25	12.5
20-40	64	32
40-60	72	36
60-80	39	19.5
TOTAL	200	100

Shows the age wise distribution of patients admitted in surgery ward. In our study, a total of 72 (36%) patients were in the age group of 40-60years

Table 3: Disease Distribution

DEPARTMENT	NUMBER OF	PERCENTAGE
ORTHOPEDICS	59	29.5
UROLOGY	22	11
ONCOLOGY	18	9
GASTROENTEROLOGY	42	21
NEUROLOGY	14	7
GYNECOLOGY	26	13
ENDOCRINOLOGY	19	9.5
TOTAL	200	100

Shows the distribution of various disease patterns of the study population. The most common disease affected department is orthopaedics (29.5%)

Table 4: Pattern of Usage Drugs in Post-Operative Patients

CLASS OF DRUGS	NUMBER OF	PERCENTAGE
ANTIBIOTICS	200	100
ANALGESICS	200	100
ANTACIDS	188	94
ANTI-EMETICS	54	27
VITAMIN	111	55.5
LAXATIVES	67	33.5
RESPIRATORY	28	14
ELECTROLYTES	22	11
IV FLUIDS	81	40.5

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 4, 2021, Pages. 5848 - 5857
Received 05 March 2021; Accepted 01 April 2021.

Shows the drugs prescribed in the study population during pre-operative stage in the descending order, Antibiotics (100%), Analgesics (100%), Anti-ulcer (94%),Vitamins (55.5%), Anti emetics (27%) and least common prescribed was electrolytes (11%).

Figure 1: Pattern of Usage of Antibiotics

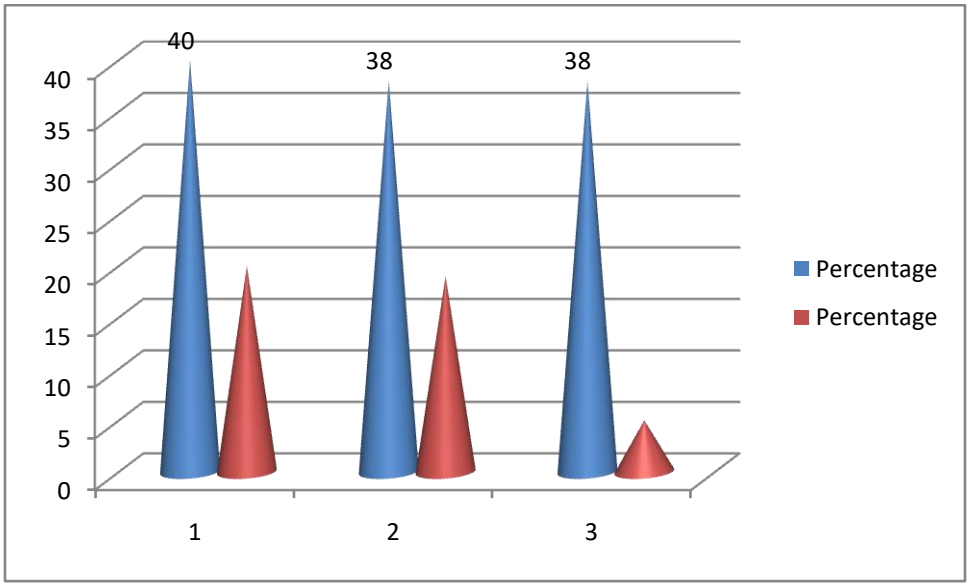
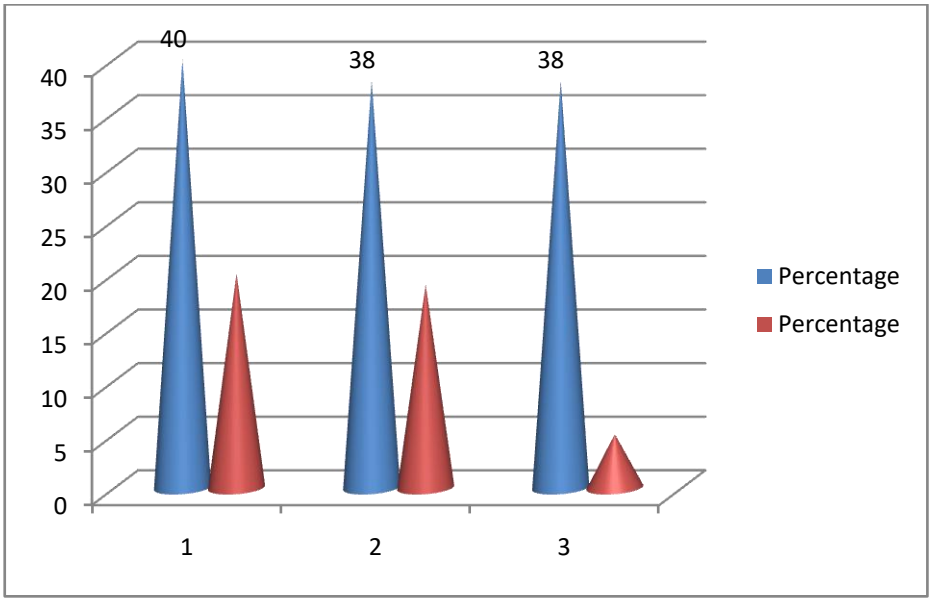


Figure 1: shows that cephalosporin class of antibiotics was found to be the most frequently prescribed (89%) followed by amino glycosides (67%),

Figure.2. : Pattern of usage of Analgesics



Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 4, 2021, Pages. 5848 - 5857
Received 05 March 2021; Accepted 01 April 2021.

CLASS OF ANALGESICS	NUMBER OF PRESCRIPTIONS	PERCENTAGE
NSAIDS	94	47
NON OPIOIDS	125	68.5
NSAIDS+NON OPIOIDS	144	72

Table 5: NSAIDS + Non-Opioid analgesics were found to be the most frequently prescribed (72%), followed by Non-Opioid Analgesics (68.5%)

Figure 2: Pattern of Usage of Anti-Emetics

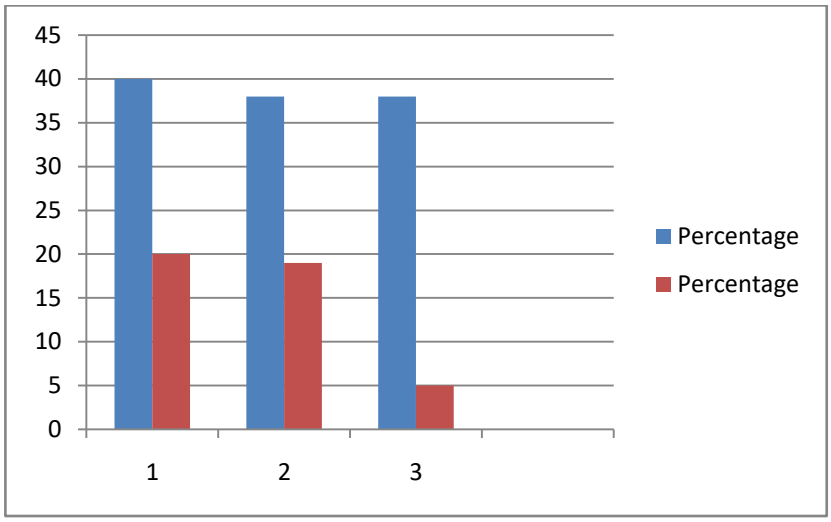


Figure 3: shows the no of different anti-emetic drugs prescribed in the study population. Serotonin antagonists 48 (24%) was most frequently prescribed among which ondansetr on was commonly prescribed.

Table 6: Pattern of Usage of Anti Ulcers

CLASS	NUMBER OF PRESCRIPTIONS	PERCENTAGE
PROTON PUMP	138	69
H2 RECEPTOR ANTAGONISTS	34	17
ULCER PROTECTIVE	10	5

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 4, 2021, Pages. 5848 - 5857
Received 05 March 2021; Accepted 01 April 2021.

Figure 4: Pattern of Usage of Number of Antibiotics

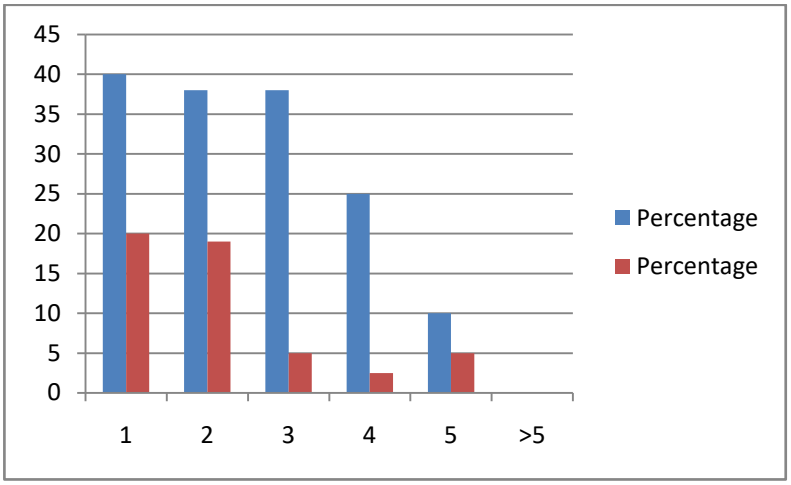
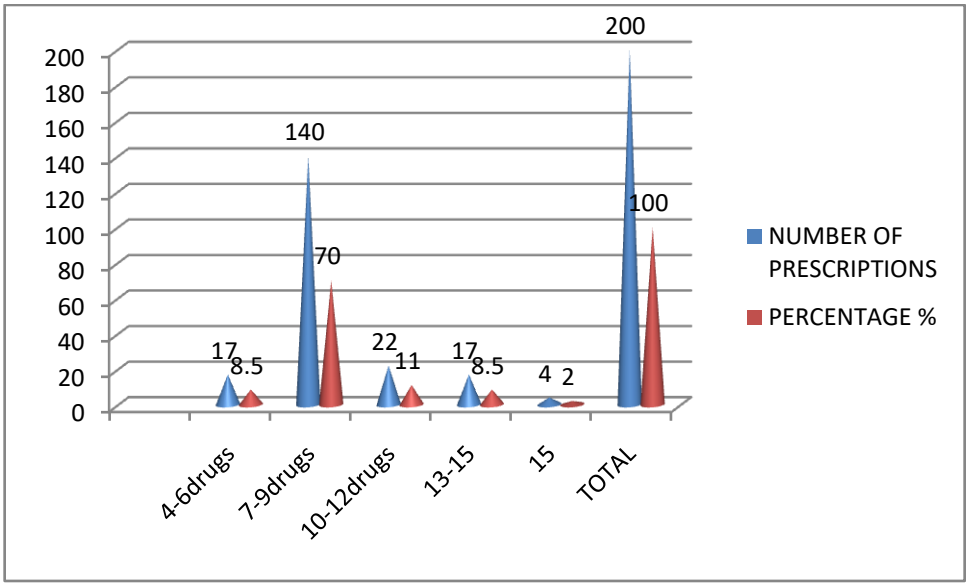


Table 5: Total Number of Drugs Encounter per Prescription



DISCUSSION

In general practice, the therapeutic approach for surgical disease conditions is primarily empirical and the main aim of the physicians is to treat as specifically as possible. The present study was focused on evaluating the drug use pattern in post- operative patients of the surgery department. During the study period; we have collected a total number of 200 cases under surgical department. We found that most of the affected people were females with 56% (n=112) and males with 44% (n=88) which was in accordance with the study done by Ram Nagina Sinha et al[13]. in which 58.5% of patients were female which is almost similar to our data. Most of the people were under the age group of 40-60 years with 36% (n=72) which is comparable to 57.08% in the study done

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 4, 2021, Pages. 5848 - 5857
Received 05 March 2021; Accepted 01 April 2021.

by Bhansali NB et al[14]., and also a study done by Bhabhor. P et al[15]., shows 49% of patients are in between the age group of 40-60 yrs. The most common disease affected under this department was orthopedics (29.5%), followed by gastroenterology (21%), gynecology (13%), urology (11%), endocrinology (9.5%), oncology (9%), and neurology (7). Drugs prescribed in the study population during post-operative stage in the descending order, Antibiotics (100%), Analgesics (100%), Anti-ulcer (94%), Vitamins (55.5%), Anti emetics(27%) and least common prescribed was electrolytes (11%).

Cephalosporin class of antibiotics was found to be the most frequently prescribed (89%) followed by amino glycosides (67%). In analgesics NSAIDS and Non-Opioidanalgesics were found to be the most frequently prescribed drugs with (72%) and (68.5%). While coming to antiemetic Serotonin antagonists 48(24%) was most frequently prescribed. Under the anti ulcer classification Proton pump inhibitors (69%) followed by H2 blockers (17%), and Ulcer-protective agents (5%) were the additional drugs prescribed to prevent the adverse effects of analgesics. Noofantibiotics per prescription in the study population in descending order, 3 antibiotics 77 (38.5%), 1 antibiotics 40 (20%), 2 antibiotic 38 (19%) and 4 antibiotics 25 (12.5%).

Total no of drugs per prescription 4-6 (8.5%) of the study population, followed by 7-9 drugs (70%), 10-12 (11%), 13-15 (8.5%), >15(2%). In every one of the 200 are prescribed with one or more injections i.e, 100% which was in accordance with the study done by sidharthamondal et al[16]. Where percentage of the injections prescribed was 100 %.Among all the drugs prescribed 65.75% were on the WHO model list of essential medicines (EML). This is higher in comparison with the findings of siddharthamondaletal. Where it was 54.89%.

In our study total number of drugs prescribed by generic name was 412 (20.90%) which is similar in consistent with the findings of Raj Kumar et al[17] where it was 192 (5%) but there is a wide variation in the study of Siddhartha Mondal et al. where it was68.51%.

CONCLUSION

In this study a total of 200 case records of post-operative were collected. In this study population male to female proportion was almost equal drug use pattern reflects the common disorders for which surgeries are performed in our hospital. This report is intended to be a step in the broader evaluation safety and efficacy of drug prescription. This study shows the usage of prescription pattern of drugs in post-operative patients. This study shows that poly pharmacy was found to be very common which is mostly observed in the case of antibiotics. Lack of generic drug prescribing was observed. Drug prescribing from essential drug list (EDL) was low.

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 4, 2021, Pages. 5848 - 5857
Received 05 March 2021; Accepted 01 April 2021.

REFERENCES

1. Navarro, Robert, Drug Utilization Review Strategies. In Managed Care Pharmacy Practice, 2008;215
   – 229.
2. WHO/EMP/MAR/2012.3
3. Agrawal JM, Patel NM, Vaniya HV, Trivedi HR, Balat JD. Drug utilization study in post-operative patients in obstetrics and gynaecology ward of a tertiary care teaching hospital. J ClinExp Res.2014;2:103-109.
4. Mangram AJ, Horan TC, Pearson ML, Silver LC, Jarvis WR. Guideline for prevention of surgical site infection. Centres for Disease Control and Prevention (CDC) Hospital Infection Control Practices Advisory Committee. American Journal of Infection Control. 1999; 27: 97-132. http://dx.doi.org/10.1016/S0196-6553(99)70088-X.
5. Classen DC, Evans RS, Pestotnik SL, Horn SD, Menlove RL, Burke JP. The timing of prophylactic administration of antibiotics and the risk of surgical-wound infection. The New England Journal of Medicine., 1992; 32:281-6.
6. ShankarPR,ParthaP,DubeyAK,MishraP,DeshpandeVY.UnivMedJ.,2005;3(2):130-7.
7. Bhansali NB. Drug utilization study in post-operative patients in surgical ward of a tertiary hospital attached with medical college. Der Pharmacia Lettre., 2013; 5(1):251-7.
8. Bhansali NB. Drug utilization study in post-operative patients in surgical ward of a tertiary care hospital attached with medical college. DerPharmaciaLettre.2013;5(1):251-7.
9. GudiolF.Surgicalantibioticprophylaxis,traditionandchange.IntJClinPract.1998;95(1):398-438.
10. Hogerzeil HV, Bimo, Ross-Degnan D, Laing RO, Ofori-Adjei D, Santoso B, Azad Chowdhury AK, Das AM, KafleKK, Mabadeje AF. Field tests for rational drug use in twelve developing countries. Lancet. 1993;342(8884):1408–1410. doi:10.1016/0140-6736(93)92760-Q
11. WHO. How to investigate drug use in health facilities: selected drug use indicators. Geneva: WHO/DAP/93.1; 1993.
12. Laing RO, Hogerzeil HV. Ten recommendations to improve use of medicines in developing countries. Health Policy Plan. 2001;16(1):13–20. doi: 10.1093/heapol/16.1.13. Oxford University Press.
13. Ram angina Sinha.A prospective study on use of antibiotics in surgery department at a tertiary care teaching hospital.Indian journal of basic & applied medical research;September 2013:Issue-8,vol- 2,p.1171-1175.
14. Bhansali NB. Drug utilization study in post-operative patients in surgical ward of a tertiary hospital attached with medical college. Der Pharmacia Lettre., 2013; 5(1):251-7.

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 4, 2021, Pages. 5848 - 5857
Received 05 March 2021; Accepted 01 April 2021.

15. P.bhabhor,an antibacterial drug utilization study at shreesayaji general hospital.the internet journal of pharmacology.2012 volume 10 number1
16. Siddhartha mondal . A drug utilization study in the indoor ward of the surgery department of a tertiary care hospital of eastern india.IOSR journal of dental and medical sciences .volume14, issue 10 ver VIII (oct.2015),PP42-47.
17. Raj kumar,kamlesh kohli.an depth study of drug prescribing pattern in the surgery department of a tertiary care teaching institute in northenindia,international journal of basic and clinical pharmacology,2014,vol-3,10.5455/2319-2003.ijbcp20140814.