



ORIGINAL RESEARCH PAPER

Pharmacology

PRESCRIBING PATTERN OF ANTIBIOTICS IN MEDICINE DEPARTMENT OF A TERTIARY CARE TEACHING HOSPITAL, UTTARAKHAND

KEY WORDS: antibiotics , prescription, outpatient

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ABSTRACT	Introduction The problems associated with inappropriate prescription of antibiotics not only effect the individual but also to the society as a whole. Therefore, it is important to document the antibiotics prescribed in every hospital.
	Objective To evaluate the prescribing pattern of Antibiotics in medicine outpatient department of Government Medical College and Dr Susheela Tiwari Hospital , Haldwani,Uttarakhand.
	Material and method Data was recorded from the outpatient department prescription forms of the patients. Statistical analysis was done.
	Result The most commonly used antibiotic was azithromycin in 71(34.5%) patients. 198 (96.11%) patients were prescribed antibiotics with generic name. Culture and sensitivity was done in 145(70.38%). Most common antibiotic prescribed in respiratory tract infection was azithromycin . In unspecified fever, most common antibiotic prescribed was cefixime . Ofloxacin and ornidazole fixed dose combination was most commonly prescribed in gastroenteritis and in urinary tract infection the most common antibiotic prescribed was nitrofurantoin.

INTRODUCTION

Today, antimicrobials are being prescribed in every branch of medicine but their judicious use is seriously needed as it is the corner stone in therapeutics. Antibiotic resistance and economic burden are major problems related to inappropriate and over prescription of antibiotics. Apart from that patients who are unnecessarily exposed to antibiotics are placed at risk for serious adverse events with no or minimal clinical benefit. Unlike other medications, the potential for spread of resistant organisms means that the misuse of antibiotics can adversely impact the health of patients who are not even exposed to them.[1]

In India ,there is not one but many problems leading to inappropriate use of antibiotics including misinformed notions on antibiotics, incomplete courses of medicine and self medication. And in these resource strapped settings antibiotic surveillance system is difficult to implement, antibiotic usage data is not available and evidence for high consumption of antibiotic is difficult to obtain. All these factors make it mandatory to perform frequent inspection and prescription monitoring in OPDs.[2]

So, in an attempt to try to document the use of antibiotics, in this study we are monitoring the prescribing pattern of antibiotics in the medicine OPD which will provide us with valuable information regarding the trends of prescribing antimicrobials in this hospital. Problems and lacunae thus found related to the prescription of antimicrobials will direct the policy makers to give streamlined guidelines for usage of drugs. So, this study has been envisaged to evaluate the prescribing pattern of antimicrobials in medicine OPD of Susheela Tiwari Government Medical College and Hospital, which caters to a large number of populations residing in the Kumaon region and Western UP.

Materials and methods

This observational prospective hospital based drug utilization study was carried out in department of Pharmacology and

department of medicine of Government Medical College and Dr. Susheela Tiwari Hospital Haldwani done after approval from departmental screening committee of pharmacology and Institutional Ethics Committee of Government Medical College Haldwani and Dr. Susheela Tiwari government hospital, Haldwani .Written informed consent was obtained from all patients. Data was collected from OPD prescribing forms of 206 patients between age group of 18 to 60 years who were prescribed with one or more antibiotics in the period between November 2016 to October 2017and has been analysed.

Data has been recorded in Microsoft office Excel, 2007. Statistical analyses has been done using computer software (SPSS Trial version 23 and primer). The qualitative data was expressed in proportion and percentages and quantitative data expressed as mean and standard deviations .The difference in proportion was analysed by using chi square test. Significance level for tests were determined as 95% (p <0.05).

Observation and results

In total 206 patients prescribed with one or more antibiotics were recruited. Non consenting patients and the patients with age less than eighteen and more than sixty were excluded. This study is carried out to monitor the current status of prescribing pattern of antibiotics in medicine OPD. Age, gender, chief complaint, diagnosis and the name of antibiotics prescribed were noted along with frequency of antibiotics duration of treatment, dose of the drug, route of drug administration on first day.

Age and gender of the patients

Distribution of age and gender of the patients coming to the medicine OPD has been depicted (table 1). 108 (52.42 %) of patients were males and 98 (47.57 %) were female.It is found that in the age group of 18 to 20 years 10(4.85%) were male and 7(3.39%) were female. In age group between 21 to 30 years of age 21(10.19%) were male and 14(6.79%) were female. in age

group between 31 and 40 years 38(18.63%) were male and 42(20.38%) were female. In the age group of 41 to 50 years 16(7.76%) were male and 15(7.28%) were female and in age group of 51 and 60 years 23(11.16%) were male and 20(9.71%) were female.(Table 1) The mean age of the patients coming medicine OPD is 38.66 years with standard deviation of 12.551. Most of the people visiting medicine OPD were 38 years of age (Table 2)

Table 1 : baseline characters of the patients

gender	Male(%)	Female(%)	Total(%)
Age 18-20yrs	10(4.85%)	7(3.39%)	17(8.3%)
Age 21-30yrs	21(10.19%)	14(6.79%)	35(16.99%)
Age 31-40yrs	38(18.63%)	42(20.38%)	80(38.83%)
Age 41-50yrs	16(7.76%)	15(7.28%)	31(15.04%)
Age 51-60yrs	23(11.16%)	20(9.71%)	43(20.86%)

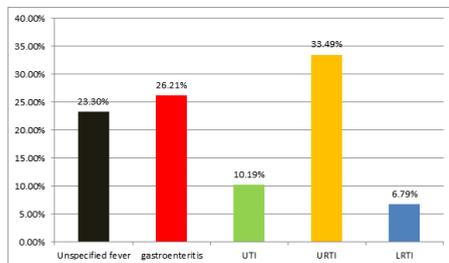
Table 2: mean age of the patients coming to medicine OPD

AGE(years)					
N	Mean	Std. Deviation	Median	Minimum	Maximum
206	38.66 yrs	12.551	38.00 yrs	18 yrs	60 yrs

Indication for prescribing antibiotics in Medicine OPD

Patients were suffering from unspecified fever in 48(23.30%) cases, UTI(Urinary tract infection) in 21(10.19%) cases ,gastroenteritis in 54 (26.21%) cases, URTI(upper respiratory tract infection) in 69(33.49%) cases and LRTI (lower respiratory tract infection) in 14(6.79%) cases. (Figure 1)

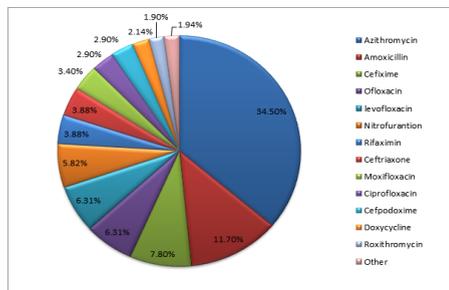
Figure 1-indications for prescribing antibiotics in medicine OPD



Antibiotics used in medicine OPD

The most commonly antibiotics prescribed were azithromycin in 71(34.5%) patients, amoxicillin in 24(11.7%) patients, cefixime in 16(7.8%) patients, ofloxacin in 13(6.31 %) patients, levofloxacin in 13(6.31%) patients, nitrofurantoin in 12(5.82%) patients , rifamixin in 8 (3.88%) patients, ceftriaxone in 8 (3.88%) patients, moxifloxacin in 7 (3.4%) patients, ciprofloxacin in 6(2.9%) patients, cefpodoxime in 6(2.9%) patients,doxycycline in 6(2.41%) roxithromycin in 4 (1.9%) patients , cifuroxime in 2(0.9%) patient and faropenem in 2(0.9%) patients (Figure 2).

Figure 2: Antibiotics used in medicine OPD



Antibiotics prescribed in different indications

Difference in antibiotics prescribed in different indications is seen in our study. Some antibiotics are prescribed in some indications more than others while some other antibiotics are prescribed

generally regardless of indication. This table shows the relation between an antibiotic and the indication for which it is prescribed. P value of less than 0.05 is taken as significant. Amoxicillin and clavulanic acid is mostly prescribed in upper respiratory tract infection (p < 0.001).Azithromycin was prescribed in unspecified fever followed by upper respiratory tract infection more than in any other indication (p < 0.001).Amoxycillin and clavulanic acid fixed dose combination was also prescribed in upper respiratory tract infection (p < 0.001).cefixime is also prescribed in fever than in any other condition (p < 0.001), Ofloxacin was prescribed mostly in gastroenteritis (p < 0.045) patients. Fixed dose combination of ofloxacin and ornidazole (p < 0.001) was only prescribed in gastroenteritis. Rifamixin was only prescribed in gastroenteritis (p < 0.001) .levofloxacin was prescribed in urinary tract infection followed by gastroenteritis.(p < 0.001) and Roxithromycin was more prescribed in upper respiratory tract infection.(p < 0.001).nitrofurantoin was only prescribed in urinary tract infection .(p < 0.001).(Table 3)

Table :3 Antibiotics prescribed in different indications

Antibiotic	LRTI		URTI		UTI		GASTRO EN TERITIS		UNSPECI FIED FEVER		Total	P value
	No	%	No	%	No	%	No	%	No	%		
Total no of patients	14		69		21		54		48		206	
Amoxicillin+clav	0	0.00	20	11.59	1	0.00	0	1.85	3	8.3	3	<0.001
Azithromycin	9	64.29	32	46.38	0	0.00	4	7.41	26	54.17	3	<0.001
Cefpodoxime	0	0.00	6	8.70	0	0.00	0	0.00	0	0.0	0	0.015
Cefixime	1	7.14	2	2.90	0	0.00	1	1.85	12	29.17	1	<0.001
Ceftriaxone	2	14.29	3	4.35	0	0.00	3	5.56	0	0.0	0	0.121
Ofloxacin	0	0.00	5	7.25	0	0.00	7	14.81	1	2.0	1	0.045
Oflox+orni	0	0.00	1	1.45	1	4.76	18	33.33	1	2.0	1	<0.001
Moxifloxacin	0	0.00	3	4.35	0	0.00	0	0.00	4	8.3	3	0.142
Rifamixin	0	0.00	0	0.00	0	0.00	8	16.67	0	0.0	0	<0.001
Levofloxacin	0	0.00	2	2.90	5	23.81	6	11.11	0	0.0	0	<0.001
Ciprofloxacin	0	0.00	2	2.90	1	4.76	3	5.56	0	0.0	0	<0.486
Doxycycline	0	0.00	0	0.00	1	4.76	2	3.70	2	4.1	2	<0.473
Cifuroxime	0	0.00	0	0.00	0	0.00	0	0.00	1	2.0	1	0.508
Roxithromycin	3	21.43	1	1.45	0	0.00	0	0.00	0	0.0	0	<0.001
Nitrofurantoin	0	0.00	0	0.00	12	63.16	0	0.00	0	0.0	0	<0.001

P < 0.05 = significant

LRTI = lower respiratory tract infection

URTI = upper respiratory tract infection

UTI = Urinary tract infection

Number of antibiotics per prescription

Out of 206 patients, in 180 (87.37%) patients the number of antibiotics per prescription was one ,in 25(12.13%) patients number of antibiotic prescribed was two and only in 1(0.48%) patients more than two antibiotics were prescribed.(Figure 3).

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