

Evaluation of the Most Commonly Dispensed Antibiotics Among the Pharmacies located in and around National Medical College Teaching Hospital, Birgunj, Nepal

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ABSTRACT

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Prescribing and dispensing antibiotics are quite common which may vary from disease to disease, hospital to hospital and prescriber to prescriber. Prescribing antibiotics haphazardly does not only devastate the resources but also leads to the development of antibiotic resistance and complicate the therapy. This study was carried out with the objective of determining the most commonly dispensed antibiotics among the pharmacies located in and around National Medical College Teaching Hospital. This was a cross-sectional and descriptive study carried out during March 2013 at the pharmacies located in and around the premises of National Medical College Teaching Hospital, Birgunj, Nepal. Purposive sampling method was adopted for sampling eight most selling pharmacies. The instrument was a self-administered inquiry form which was distributed to the selected pharmacies to collect the required information pertaining to the antibiotics sale. The filled inquiry forms were collected and data were entered in Microsoft Office Excel 97-2003 Worksheet and analyzed. The top 15 selling antibiotics belonged to four different groups including Penicillins, Cephalosporins, Macrolides and Fluoroquinolones. Beta-lactam antibiotics were found the highest selling group of antibiotics which constitute about 2/3rd of the total antibiotics dispensed daily. Furthermore, the average daily sale of Penicillin and Cephalosporin antibiotics was nearly same with Penicillins (32.25%) and Cephalosporins (32.11%) followed by Macrolides (16.03%) and Fluoroquinolones (15.56%). Beta lactam antibiotics were the most selling antibiotics followed by Macrolides and Fluoroquinolones.

Keywords: Antibiotics, Most selling, Nepal, Pharmacies

INTRODUCTION

Antibiotics are among the highly prescribed medicines for treating health complications of people.^{1,2} Although various categories of antibiotics are in practice, cephalosporin antibiotics are widely prescribed and used to treat infectious diseases in Nepal.^{3,4}

Antibiotics if used rationally can save lives, reduce the load of diseases and improve the quality of life of millions of people. But, unfortunately irrational use of antibiotics has become a pervasive problem.⁵ Prescribing antibiotics haphazardly does not only devastate the resources but also leads to the development of antibiotic resistance and complicate the therapy.³ In Nepal, the Government made amendment in its Nation Drug Policy (1995) in 2001 toward promoting pragmatic use of antibiotics. Furthermore, other health related stakeholders have been continuously trying to reinforce the proper utilization of antibiotics however there seems no satisfactory improvement.⁵ In recent times, there is an uncontrolled proliferation of prescribing and using antibiotics even for the self limiting complications. According to the study conducted by Jauhari et al, proper prescribing of antibiotics is such a rare instance that only 1/5th

of the patients are prescribed antibiotics after proper diagnosis and culture sensitivity test.⁶

The study was carried out with the objective of determining the most commonly dispensed antibiotics among the pharmacies located in and around National Medical College Teaching Hospital.

MATERIAL AND METHOD

The study was a cross-sectional and descriptive in nature which was carried out during March 2013 at the pharmacies located in and around the premises of National Medical College Teaching Hospital (NMCTH), Birgunj, Nepal. National Medical College is a multi-storied 1050 bedded well equipped tertiary care hospital in central southern region of Nepal adjoining India boarder. NMCTH is probably the largest and fully residential private medical college of Nepal affiliated to Tribhuvan University (TU) with an average daily out-patient flow of 600-700 and about 75% bed occupancy.⁷

The study population were the pharmacies located in and around the premises of National Medical College Teaching Hospital (NMCTH), Birgunj, Nepal. A sample size of eight most selling pharmacies was enrolled in the study. Altogether there were about 10 pharmacies of which three were located inside the hospital premises and the rest were situated outside the boundary of hospital. Among them, eight were the most selling pharmacies categorized on the basis of their daily transaction. Purposive sampling method was adopted for sampling the pharmacies. The instrument was a self-

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administered inquiry form which was distributed to the selected pharmacies to gather required information pertaining to the antibiotics sale. The filled inquiry forms were collected and data were entered in Microsoft Office Excel 97-2003 Worksheet and analyzed.

RESULTS

A total of eight pharmacies were recruited with the emphasis to find out the most selling antibiotics. The top 15 selling antibiotics belonged to four different groups including Penicillins, Cephalosporins, Macrolides and Fluoroquinolones. Beta-lactam antibiotics were found the highest selling group of antibiotics which constitute about 2/3rd of the total antibiotics dispensed daily. Furthermore, the average daily sale of Penicillin and Cephalosporin antibiotics was nearly same with Penicillins (32.25%) and Cephalosporins (32.11%) followed by Macrolide antibiotics (16.03%) and Fluoroquinolones (15.56%). Further details about the antibiotics sale has been depicted in Table 1.

DISCUSSION

The study was carried out with the objective of finding out the most commonly dispensed antibiotics in the vicinity of National Medical College Teaching Hospital, Birgunj, Nepal. In Nepal, prescribing antibiotics is widespread and irrational as highlighted by various studies.^{1,3, 6, 8} The pattern of prescribing antibiotics may vary from disease to disease, place to place and the type of patients.

The study findings reveal that about 2/3rd of the antibiotics dispensed daily were from the beta-lactam family. Furthermore, the pharmacies which were surveyed and located around NMCTH dispense medicines only after getting the prescriptions from different departments of the hospital. The possibility of dispensing medicines without prescription by these pharmacies is negligible because the locality is away from the main city where population density is scarce. Thus, it indicates that beta-lactam antibiotics are prescribed more frequently for treating infectious complications of the patients visiting National Medical College Teaching Hospital. The finding complies with the study conducted by Ansari et al but contradicts with the outcome of the study by Kumar et al.^{1,3} This may be due to the reason that respiratory tract infections were the most prevalent in the latter study in which case macrolide antibiotics are believed to be the suitable antibiotics.

After Beta-lactam antibiotics, Macrolides and Fluoroquinolones were found the second and third most dispensed antibiotics respectively. The study carried out by the Shakar et al also found a widespread use of Fluoroquinolones mainly for surgical prophylaxis and UTI.⁹

As the study was conducted among a limited number of pharmacies of a locality of Nepal, the study finding cannot be generalized. Hence, the study findings recommend conducting multi-centric studies with emphasis to the type of disease or complication and the antibiotics prescribed and dispensed.

CONCLUSION

Although four different groups of antibiotics such as Penicillins, Cephalosporins, Macrolides and Fluoroquinolones were the top most selling antibiotics, Beta lactam antibiotics share about 2/3rd of the total daily sale. This clearly indicates that prescribing and dispensing Beta lactam antibiotics are widespread followed by Macrolides and Fluoroquinolones.

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Table 1: List of antibiotics with average daily sale and their percentage share

Name of antibiotics	Average daily total sale quantity	Percentage share of daily total antibiotics sold
Co-amoxi-clav	775	14.45
Amoxycillin	570	10.63
Ofloxacin	435	08.11
Cefixime	430	08.02
Clarithromycin	425	07.92
Ciprofloxacin	400	07.46
Cefuroxime	379	07.06
Azithromycin	335	06.24
Ceftriaxone	257	04.79
Cefotaxime	240	04.47
Cefpodoxime	224	04.18
Flucloxacillin	195	03.63
Cefadroxyl	193	03.60
Ampicillin	190	03.54
Roxithromycin	100	01.86
Others	217	04.04
Total	5365	100

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