

Original Research Article

Antibiotic Utilization Pattern in Gynecology Out-Patient Department of a Tertiary Care Centre in Eastern India

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Abstract: Antibiotics are commonly prescribed in the Gynecology out-patient department for treatment of such infections which are not common in general out-patient departments. This cross-sectional, observational study was conducted to evaluate the recent antibiotic utilization pattern amongst the patients attending the Gynecology department of a tertiary care Teaching hospital in Eastern India. Six hundred and twelve prescriptions obtained from patients attending the out-patient department of Gynecology since June 2015 to November 2015 were included in the study. Data was collected in a pre-designed case record form. Baseline demographic features, provisional diagnosis/indication, type and number of antibiotics, formulation, duration, route of administration of antibiotics, average number of drugs per prescription and commonest antibiotic prescribed were noted. Single antibiotic was prescribed in 35.17% prescriptions while 66.83% received more than one antibiotic. The most common oral antibiotic used was doxycycline (67.08%) followed by cefixime (14.29%). In 97.2% prescriptions, drugs were written in their generic name. Doxycycline and cefixime were most commonly prescribed antibiotics; most of the antibiotics were prescribed in generic name from the essential medicine list of the country.

Keywords: Drug Utilization Study, Antibiotics, Gynecology department

INTRODUCTION

The history of advancement of modern medicine must include the inventions in the field of antimicrobial chemotherapeutics. 'Bacteria invented antibiotics billions of years ago'[1]; antibiotics are described as substances produced by microorganisms, suppresses the growth or kill other microorganisms at very low concentrations. The term antimicrobial agents include both synthetic as well as naturally obtained drugs. Since 1936 after Alexander Fleming has discovered Penicillin, antibiotics have become an inevitable part of the modern life. Human longevity and quality of life has been improved by antibiotics. They are among the most commonly prescribed drugs of any kind throughout the globe [2]. Antibiotics save life of hundreds of millions of people. Elimination or extinction of some infections is possible by using a few doses of antibiotics. In India the prevalence of use of antimicrobial agents varies from 24 to 67%. It was observed that 64% of total antibiotics prescribed were either not indicated or inappropriate in terms of drug or dosage and was estimated that in India, they account for over 50% of the value of drugs sold. The use of

antibiotics in India between the years 2005 and 2009 is on high, marked by 40% increase in the sale [3]. It has been observed that overuse and inappropriate use of antibiotics causes detrimental impact. It can not only lead to inappropriate resource utilization and expensive treatment but also can cause development of antibiotic resistance leading to treatment failure. Also emerging and re-emerging of infectious diseases have caused both health and social issues with having tremendous consequences on health of individuals. World stands on the global crisis of infectious diseases due to the invasion of new pathogens with a simultaneous increase in the prevalence of drug resistance pathogens [4]. The growing concern of the clinicians about misuse and overuse of antibiotics has been supported by the motto of WHO on World Health Day 2011 to hinder the spread of antimicrobial resistance. India has also followed suit by implementing "National Policy for containment of Antimicrobial Resistance in India" in 2011 [5, 6].

Antibiotics are one of the most commonly prescribed drugs in the gynecology department of any

hospital. Patterns of use in the patients attending the gynecology department should be assessed separately as the indications for antibiotic use is quite different from the patients who are attending the general medicine, pediatric medicine and other outpatient departments. However, there is limited data in this respect from the whole world and no recent data from the world and India also. With this background, the present study was undertaken to observe the antibiotic utilization pattern in the gynecology out-patient department of a tertiary care teaching Hospital.

MATERIALS AND METHODS

The observational, cross-sectional study was carried out in the Gynecology out-patient department (OPD) of a tertiary care teaching hospital. This is a government hospital, situated in the central part of the city which caters at least 10 adjoining other districts. The gynecology department is one of the oldest gynecology departments in Asia. Institutional Ethics Committee approval was obtained beforehand. Written informed consent was obtained from every patient. All the patients with antibiotics in their prescriptions, between 18-60 years of age were included in the study over 6 months (June 2015 to November 2015). Scanned copies of the prescriptions were collected.

Antibiotics were supplied free in the hospital. The operational definition of antibiotics here included synthetic as well as naturally obtained substances active against bacteria and metronidazole was included as anti-trichomonal agent. Baseline demographic features, provisional diagnosis, antibiotics prescribed with formulations, duration, and combination of antibiotics were revealed from the prescription and captured on a structured case record form. Other important parameters

which were assessed were: average number of drugs per prescription, prescriptions with generic name and from essential medicine list. Data was summarized by routine descriptive statistics and was presented in numerals and percentages.

RESULTS

A total of 612 OPD prescriptions with antibiotics were reviewed. The mean age of the patients was (32.04±11.36) years. According to the age distribution, patients were most commonly distributed around the age group of (25-30) years. The most common indication for which antibiotics were prescribed was lower abdominal pain/PID (253/41.4%) followed by vaginal discharge (148/24.2%) [Table 1]. Total no. of medicines prescribed 1959, total antibiotics 1194. Average number of medicines and antibiotics per prescription was 3.2 and 1.95 respectively. Prevalence of antibiotic utilization was 60.94%. The most common oral antibiotic used was doxycycline (801/67.08%) followed by cefixime (170/14.29%) [Table2]. Injection ceftriaxone was used in a single case. Percentages of prescriptions with single, double and triple antibiotics were 20.89%, 60.44% and 18.67% respectively [Figure 1]. Antibiotics were most commonly prescribed for the duration of 14 days (70.75%). In 12.58% of cases it was for seven days [Table 3]. Drugs prescribed in different formulations were also calculated; 74.35% drugs were in tablet form whereas 23.65% were in capsule form [Figure 2]. In 97.2% prescriptions medicines were written in their generic name, 90.53% of medicines prescribed from Essential Medicine List of the country. Other medicines found in the prescriptions were: anti-spasmodics, NSAIDs, hormones, vitamins and minerals, antifungals.

Table 1: Indication for prescribing antibiotics

Diagnosis	Number(%)
Lower abdominal pain/PID	253(41.40)
Vaginal discharge	148(24.20)
Post procedure prophylaxis	61(9.87)
UTI	12(1.91)
Diagnosis not mentioned	138(22.62)

Table 2: Frequency of oral antibiotics used

Oral antibiotics	Number (%)
Doxycycline	801(67.08)
Cefixime	170(14.29)
Ciprofloxacin	74(6.21)
Levofloxacin	40(3.42)
Ofloxacin	37(3.11)
Azithromycin	30(2.48)
Metronidazole	22(1.86)
Amoxicillin	18(1.55)

Table 3: Duration of antibiotic use

Duration (in days)	Percentages
Fourteen days	70.75%
Seven days	12.58%
Five days	9.75%
Ten days	5.67%
Fifteen days	0.64%
Three days	0.31%
Eight days	0.31%

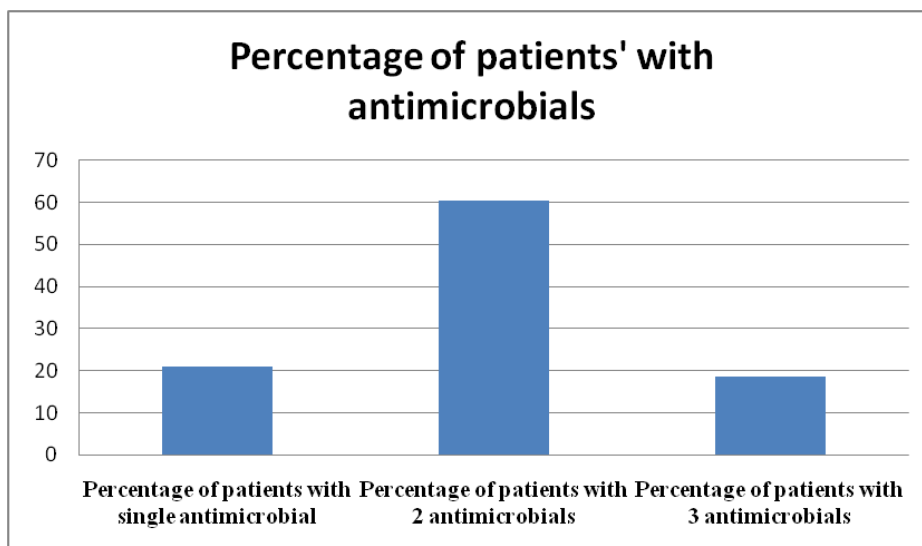


Fig-1: Percentage of patients' with single/double/triple antibiotics

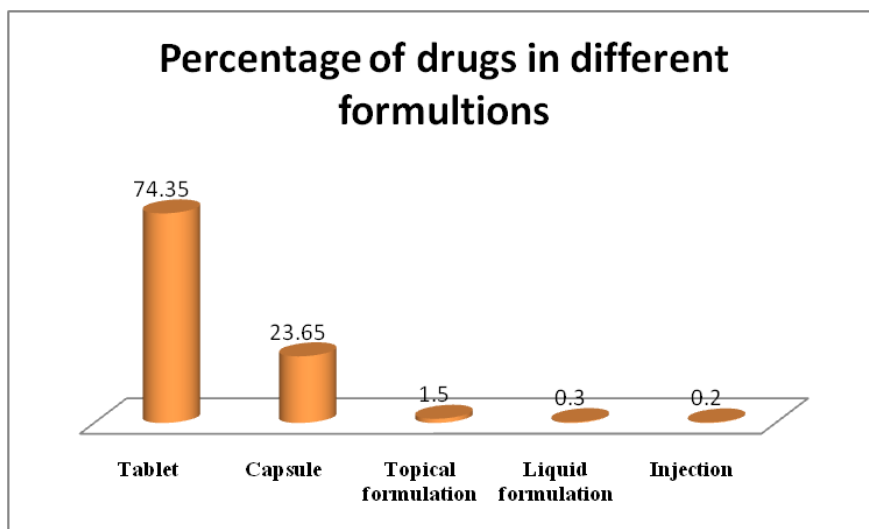


Fig-2: Antibiotics in different formulations

DISCUSSION

In this study, the most commonly prescribed antibiotic was doxycycline(67.08%) followed by cefixime(14.29%). In one study, where indoor patients with gynecology problems were evaluated, metronidazole followed by ampicillin were the most commonly prescribed drugs [9]. In another study study, where PID patients were evaluated, most commonly used drugs were found to be antifungals(25.90%) and

metronidazole(20.10%). Doxycycline was prescribed in 18.14% cases [10]. In the present study, 41% of patients were presented with lower abdominal pain/PID, whereas 24% of patients were presented with vaginal discharge. Diagnosis was not mentioned in 22% of cases, antibiotics were prescribed empirically for these cases. In this study, average number of medicines and antibiotics per prescription was 3.2 and 1.95 respectively. Average number of medicines and

antibiotics reported by one study was respectively 2.6 and 2.3 [10]. In this study, percentages of prescriptions with single, double and triple antibiotics were respectively 20.89%, 60.44% and 18.67%. One study reported that single antibiotic was used in 30% of cases whereas two and three and even four antibiotics were used in 14% and 20% of cases [9]. In this study, 98% of antibiotics dispensed in oral formulations; whereas one study reported 88% of antibiotics were prescribed in oral formulations [10]. In this study, 97.2% of medicines were written in generic name, 90% of the medicines were prescribed from Essential Medicine List of India. In one study, no medicine was prescribed in generic name, whereas in another study, drugs prescribed in generic name was 37.71%[9,10]. In this study, concomitant medicines found in the prescriptions were antispasmodics, NSAIDs, hormones etc. PPIs, NSAIDs, sedatives were the concomitant medicines in another study [10].

CONCLUSION

The present study reveals that the most common indication for which antibiotic was prescribed in gynecology out-patient department was PID/ lower abdominal pain. Most of the medicines were prescribed in generic name, 90% of the medicines were prescribed from the Essential Medicine List of India. Most common antibiotic which was prescribed in gynecology out-patient department was doxycycline, use of which is not common in general and other out-patient departments.

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