Study of drug utilization pattern in gynecology department of tertiary care hospital of Rajasthan, India

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ABSTRACT

Background: With increasing awareness the flow of patients visiting gynecology outpatient department has increased. Drugs used in gynecology are one of the most selling drugs in India, however they are least studied with respect to drug utilization. Thus, present study was undertaken to analyse drug utilization pattern of Gynecology OPD in a tertiary care hospital.

Methods: A retrospective, cross sectional, observational study of prescriptions in Gynecology OPD of Jhalawar medical college, Jhalawar. Data was obtained from medical record database of patients that attended Gynecology OPD from October 2017 to March 2018 over period of six months. Prescription records of patients were screened as per inclusion and exclusion criteria and 300 prescriptions were randomly selected. Patient related, and drug related information was collected on a customized data collection sheet.

Results: The mean age of patients was 20.5±8.65 years and common age of presentation was >18-30 years. In infective cases, PID (40.6%) was common, and in non-infective cases, menorrhagia (23.8%) was common. The average number of drugs per prescription was 5.2. In drug category, minerals (46.4%) were most commonly prescribed, followed by antimicrobials (27.6%), and NSAIDs (20.1%). Polypharmacy was observed in 100% of the prescriptions.

Conclusions: In the present study all of the drugs prescribed were generic which were from the essential medical list of NLEM and WHO. This study revealed deviation from rational prescribing by the prescribers because average number of drugs per prescription was significantly higher than that recommended by WHO.

Keywords: Drug utilization, Gynecology, Outpatient department
As per data by All India Origin Chemists and Distributors -Advanced Working, Action and Correction System (AIOCD-AWACS) market research firm, Gynecology drugs are one of the strong selling drugs in pharmaceutical market; they rank as the 8th in all the super groups with 16.4% growth in the month of February 2012. However, they are the least studied drugs in terms of drug utilization studies.

There are more effective drugs (medicines) today in the market than ever before. Yet, drugs are frequently not used to their full potential or according to the generally accepted criteria. Patients are better educated, have greater expectations from health care, and frequently use multiple sources of health care. Considering the patient needs on one hand and vast number of drugs available on the other, it is very important to have appropriate prescriptions. All prescribing is not necessarily based on patient needs and all patient needs are not necessarily met with drug therapy. Consequently, there is as much concern about inappropriate and expensive prescribing, as about under-prescribing.

The principal aim of this drug utilization research is to facilitate appropriate use of drugs as per WHO guidelines in patient populations, minimize the adverse event and drug interactions leading to better patient outcome. Considering the flow of the gynecology patients and scarcity of data with respect to drug utilization study (DUS), the present study is planned to examine the patterns of drug prescription in the gynecology outpatient department (OPD).

The objectives of the present study were:

- To study the drug utilization pattern of drugs used in the gynecology out-patient department of a tertiary care hospital
- Average number of drugs prescribed per prescription and relationship between patient demographics and prescription pattern
- Indications for which various drugs were prescribed and percentage usage of various drugs, various dosage forms of the drugs
- Drugs prescribed by generic name and brand name, drugs prescribed from Indian National List of Essential Medicines (NLEM) 2015, WHO List of Essential Medicines 2015, fixed drug combinations and poly-pharmacy.

**METHODS**

A retrospective, observational, cross sectional study was done by collecting the prescriptions of the patients who attended the Gynecology Outpatient Department of Jhalawar medical college, Jhalawar. The study was conducted after getting approval from the Institutional Ethics Committee.

The 1100 patient’s data was screened and analysed as per the inclusion and exclusion criteria during the six months period from October 2017 to March 2018. After screening 300 prescriptions were selected and analysed. The pro-forma was designed for recording the prescription data like age, diagnosis, month of presentation, drug related information like number of drugs prescribed, drug doses, drug dosage form, route of administration, fixed dose combinations of drugs, drugs prescription by generic or brand names.

**Inclusion criteria**
- Data of patients with age >18 years after screening having details of parameters under study were included.

**Exclusion criteria**
- Data of Gynecology In-door patients during the study duration, emergency patients, Incomplete data.

**RESULTS**

Total of 300 prescriptions were analysed. The mean age of presentation was 20.5 ± 8.65 years. Among all the prescriptions, 226 (75.3%) were issued to patients from rural area and 74 (24.7%) to patients from urban area. The average no. of drugs per prescription was 5.2.

Out of 300 prescriptions, 180, 96 and 24 were in age group >18-30 years, >30-50 years and > 50 years respectively. Out of 300 prescriptions, 128(42.7%) were infective cases and 172(57.3%) were non-infective. Distribution of infective diseases among patients visiting Gynecology OPD is given in Table 1.

| Infective diseases          | Age >18-30 yrs | Age >30-50 yrs | Age >50 yrs | Total | Percentage |
|-----------------------------|----------------|----------------|-------------|-------|------------|
| PID                         | 32             | 15             | 05          | 52    | 40.6       |
| Vaginal discharge           | 27             | 09             | 06          | 42    | 32.8       |
| UTI                         | 12             | 06             | 03          | 21    | 16.4       |
| Episiotomy wound            | 07             | 00             | 00          | 07    | 0.05       |
| Diarrhoea                   | 04             | 02             | 00          | 06    | 0.046      |
| Total                       | 82             | 32             | 14          | 128   | 100        |

PID-Pelvic Inflammatory Disease, UTI- Urinary Tract Infection
Among non-infective cases, menstrual disorders were common, in which menorrhagia was most common followed by DUB and amenorrhoea. Distribution of non-infective diseases among patients visiting gynecology OPD is given in Table 2.

A total of 1560 drugs were prescribed in 300 prescriptions. Among all drugs, tablet forms (66.5) are more commonly prescribed followed by capsule and pessary. Among all drugs, Minerals were most commonly prescribed (46.4%). In minerals, iron and folic acid supplements were most common followed by calcium.

### Table 2: Distribution of non-infective diseases according to age groups.

| Non-Infected diseases | Age >18-30 yrs | Age >30-50 yrs | Age >50 yrs | Total | Percentage |
|-----------------------|----------------|---------------|-------------|-------|------------|
| Menorrhagia           | 25             | 13            | 03          | 41    | 23.8       |
| DUB                   | 21             | 11            | 00          | 32    | 18.6       |
| Amenorrhoea           | 15             | 07            | 00          | 22    | 12.8       |
| Dysmenorrhoea         | 19             | 02            | 00          | 21    | 12.2       |
| Irregular menses      | 00             | 19            | 00          | 19    | 11.05      |
| PCOD                  | 18             | 00            | 00          | 18    | 10.5       |
| Fibroid uterus        | 00             | 08            | 00          | 08    | 4.7        |
| Prolapse              | 00             | 02            | 04          | 06    | 3.5        |
| Adenomyosis           | 00             | 02            | 02          | 04    | 2.3        |
| Ca Cervix             | 00             | 00            | 01          | 01    | 0.006      |
| Total                 | 98             | 64            | 10          | 172   | 100        |

DUB- Dysfunctional uterine bleeding, PCOD- Polycystic ovarian disease, Ca-Carcinoma

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### Table 3: Distribution of drugs according to various dosage forms.

| Dosage forms | Total drugs(n) | Percent |
|--------------|----------------|---------|
| Tablet       | 1038           | 66.5    |
| Capsule      | 328            | 21      |
| Pessary      | 147            | 9.4     |
| Syrup        | 47             | 3       |
| Total        | 1560           | 100     |

### Table 4: Distribution of drugs according to Pharmacological class.

| Pharmacological classes | Total drugs(n) | Percent |
|-------------------------|----------------|---------|
| Minerals                | 724            | 46.4    |
| Antibiotics             | 430            | 27.6    |
| NSAIDs                  | 313            | 20.1    |
| Hormonal preparatritions | 53            | 8.3     |
| Miscellaneous           | 40             | 2.6     |
| Total                   | 1560           | 100     |

Oral Contraceptive Pills (OCP) were commonly prescribed followed by cyclical Progesterone. Out of 1560 drugs prescribed, 100 % drugs were prescribed by generic name, 133 (8.5%) prescribed were fixed dose combination. Polypharmacy (containing >2 drugs per prescriptions) was observed in 300 (100%) prescriptions. Distribution of drugs according to various dosage forms and pharmacological classes are given in Table 3 and Table 4 respectively.

**DISCUSSION**

In our study mean age of presentation was 20.5±8.65 years and the most common age group was >18-30 years. In studies carried out by Kaur et. al. mean age of women attending Gynecology OPD was 29.80±6.293 years. Similarly, Shalini et al reported 70% patients were between 20-29 years. This may be due to the fact that in our country, this is the most common age group where females become sexually active. Also, this is the common reproductive age group. Due to lack of awareness, sexually transmitted diseases are common in this age group bringing them to OPD. In present study 226 (75.3%) patients were from rural area and 74 (24.7%) patients were from urban area. This indicates that majority of the rural patients depend on the peripheral health services for gynecological diseases. Therefore, these services should be strengthened, and all the essential medicines be made available to reduce morbidity among women from rural areas. Reproductive/sexual tract infections (RTI/STI) are major cause of gynecological morbidity all over the world. NFHS-3, estimates that 11.1% of women were reported to have STI in India. Thapa et al reported that commonest age group of STI is 20-29 years and the most common symptoms are vaginal discharge.

In present study PID is most common infectious disease followed by vaginal discharge and UTI. According to Patel et al, Pelvic Inflammatory Disease (PID) is one of the most serious infections and is a common problem encountered in gynecological clinics in India and...
abroad. In present study urinary tract infection (UTI) was seen mainly in >18-30 years of age group. As per Gupta et al, more than half of the females with lower urinary tract symptoms were middle aged between 31-55 years of age.  

Among menstrual disorders in our study, in >18-30 years of age group, menorrhagia was common. As per Harlow et al menstrual disturbances are between first and fourth most common reported gynecological complaints in India.  

Among all the drugs, 46.4% prescribed were Minerals in which Iron and Folic acid supplements were commonly prescribed. In India 55% of the females have anemia and is more widespread among both women and children and it has risen almost 5% points than NFHS-2. As per Bhatia et al approximately one-third of all women in OPD reported symptoms of anaemia. In present study diagnosed cases of anemia were less compared to Iron and folic acid supplements prescribed as majority of these were prescribed based on symptoms of anemia. Also, many physicians prescribe these supplements considering the nutritional status and socioeconomic background of Indian women.  

The second commonly prescribed group in our study were antimicrobial drugs, in which Metronidazole was common followed by Doxycycline and Ciprofloxacin. In the present study, the encounters with an antibiotic prescription was 27.6% which is less than the results of Norway (48%) and Iran (61.9%)18. In a study by Shah et al in indoor patients Ciprofloxacin (60.90%) was commonly used followed by Ampicillin (54.54%) and Metronidazole (39.69%). A number of Indian studies have recorded a high level of use of Metronidazole, Ciprofloxacin, Cefazolin in gynecological department. As per Sihavong et al, recommended drugs for the treatment of vaginal discharge and lower abdominal pain syndromes include Metronidazole orally or vaginal suppository. According to WHO, 15-25% of antibiotics encountered is expectable in the countries where an infectious disease is more prevalent.  

The third commonly prescribed drugs in our study were NSAIDs. As per Dhaubhadel et al pain is the most distressing experience of human beings and pelvic pain is one of the most common reasons for gynecology consultation. The average number of drugs per prescription in present study was 5.2. Since, WHO has recommended that average number of drug per prescription should not be >2.0, the results of the study reflect polypharmacy which may lead to adverse drug reactions, increase the risk of drug interactions, dispensing errors, decrease adherence to drug regimens and unnecessary drug expenses. Due to unawareness of the gynecological diseases there is less follow-up which a contributing factor for the increase in drugs per prescription is. In present study all of the drugs prescribed were generic which were from the essential medical list NLEM (2015) and WHO (2015).  

**CONCLUSION**  

Present study focused on understanding drug prescription and trends with respect to Gynecology OPD. This study revealed deviation from rational prescribing by the prescribers because average number of drugs per prescription was significantly higher than that recommended by WHO. It is suggested that periodic evaluation of prescribing practices would help to promote rational practice.  

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