

## Evaluation of Prescription Pattern and Cost-Effectiveness among Patients Associated With Gynaecological Diseases in Government Maternity Hospital, Lucknow (U. P.)-India

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### ABSTRACT

Drug is a very important link between producer and consumer. Thus a study on prescribing pattern and pharmacoconomics helps in accessing the quality of health care services. A retrospective study was undertaken in the OBG Department, Maternity Hospital, Lucknow, India. A clinical survey was conducted on 119 gynaecological patients, out of which 19 patients were excluded according to exclusion criteria. Audited patients were in the age group of 18 to 60 years. Clinical data indicated that 22 % of women suffered from irregular menses, leucorrhoea (18 %), vulvitis (16 %), osteoporosis (15 %), recurrent bleeding (11 %), uterus inflammation (8 %), endocervicitis (2 %), feranculitis (2 %) and breast pain (2 %). Clinical survey revealed that 80 % women were prescribed minerals and vitamins, 56 % Analgesics, 47 % Antibiotics, 42 % Antimicrobials, 39 % Iron tonics, 23 % Steroids, 6 % Anti-allergic, 4 % antispasmodic and 6 % Anti-inflammatory therapy at the mean age of 38 years.

It was observed that the drugs prescribed were correct for the current diagnosis and treatment. There were no any earlier records pertaining to their medical history and treatment regimen already undertaken. Most of the physicians were very much aware about diagnosis and treatment of gynaecological problems.

Physicians are required to pay more attention while prescribing drugs involved in long term therapy with serious side effects such as antibiotics, steroidal drugs etc. Patients on long term drug therapy should undergo proper counseling and regular monitoring regarding the use of drugs. Pharmacoconomical steps taken up by the hospital is highly appreciated. But care should be taken that the outcome of the therapy is not compromised while providing cost benefits to the patients.

**Keywords:** Gynaecological diseases, Prescription pattern, Pharmacoconomical evaluation, Patient safety.

### INTRODUCTION

Irrational prescription of drugs is of common occurrence in clinical practice.<sup>[1]</sup> The study of prescribing pattern is an important component of medical audit which helps in monitoring, evaluating and making necessary modifications in the prescribing practices to achieve a rational and cost effective medical care. Auditing of prescriptions forms an important part of drug utilization studies.<sup>[2]</sup> The misuse of these agents leads to increased incidence of adverse effects, emergence of resistant strains and increase in cost of therapy.<sup>[3]</sup> In India and other Third World countries, women usually do not consult physicians or gynaecologists, due to inhibition or lack of perception of causes of disease.

Their only contact with the health care system is through health workers for family welfare programs.<sup>[4]</sup> The lack of concern of health care planners for the prevention of gynaecological abnormalities can be traced to the lack of adequate information about rural health problems. Most data on morbidity among nonpregnant women are either hospital based<sup>[5-6]</sup> or selective for a particular disease.<sup>[4,7]</sup> Occasional studies among the rural population in India have pointed out that gynaecological morbidity may be present in 92 % of the women.<sup>[6]</sup>

Gynaecological health is an important component of any woman's health status. Gynaecological disorders can have a substantial impact on many aspects of quality of life, including reproductive ability, sexual functioning, mental health, and the ability to work and to perform routine physical activities.<sup>[8]</sup>

More than a third of women in the United States will, at some point in their lives, develop a gynaecological problem that is severe or potentially problematic enough to lead to

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hysterectomy. Several studies have been conducted to examine gynaecological conditions associated with hysterectomy.<sup>[9]</sup>

These studies have consistently found that the most common principle diagnosis among women having hysterectomy is uterine fibroids. Other common indications for hysterectomy are uterine prolapsed, endometriosis, menstrual disorder and cancer. However, little is currently known about the prevalence of these and other gynecological conditions in the general population, and about the Impact of these conditions on health care system usage.

Drugs play an important role in protecting, maintaining and restoring health. Prescription writing is a science and an art, as it conveys the message from the prescriber to the patient. The treatment of diseases by the use of essential drugs, prescribed by their generic names, has been emphasized by the WHO and the National Health Policy of India.<sup>[10]</sup> The International Network for the Rational Use of Drugs (INRUD) generated indicators in three main drug use areas viz prescribing, patient care and drug systems.<sup>[11]</sup>

The cost of drug prescription poses problems in developing countries such as India, which allocates only 0.9 % of its Gross Domestic Product (GDP), which is Rs. 200 per capita to health.<sup>[12]</sup> The allocation for meeting the cost of the drugs is even meager. Moreover the production of pharmaceutical preparations in India is grossly imbalanced and there is cut throat competition among drug companies, which breeds malpractice. Indian markets are flooded with over 70,000 formulations, as compared to about 350 listed in the WHO essential drug list, and pharmaceutical companies encourage doctors to prescribe branded medicines, often in exchange for favors. This study was therefore undertaken with the objective to find out the prescription pattern and cost per prescription at different levels of health facilities in the public health facilities of Lucknow - the capital city of Uttar Pradesh, a state in North India.

This paper presents prevalence rates for categories of gynaecological conditions for women aged 18 to 60, reported as part of government maternity hospital. Additionally it examines the relationship between the gynecological conditions and various other factors, including prescription pattern and cost effectiveness among patients associated with gynaecological disorders.

**SUBJECTS AND METHODS**

A retrospective study of six months duration was undertaken in the department of gynaecology of “Virangna Jhalkaribai maternity hospital”, Lucknow (U.P.) and all prescriptions of outpatient of the hospital were analyzed for the antibiotics, antimicrobials, anti-inflammatory, analgesic, steroids, anti-allergic, minerals and vitamins prescribed.

The disease which were included for evaluation of prescription pattern were irregular menses, leucorrhoea, vulvitis ,recurrent bleeding, uterus infection, endocervitis, ferunculitis, pain in breast, excess cough in pregnancy, excess gastric discomfort in pregnancy. Surgical labour, Malignancy cases were considered for exclusion criteria. In another hand evaluation of cost effectiveness were also analyzed according to different categories of medicines. A comparative difference between medicine cost in hospital and medicine cost in market were analyzed for pharmacoeconomic point of view. Audited patient were in age group of 18 yrs to 60 yrs. The survey was descriptive and data was

summarized as counts and percentages, some of the questions had multiple options to choose from, therefore the sum total of percentage is not always 100 %.

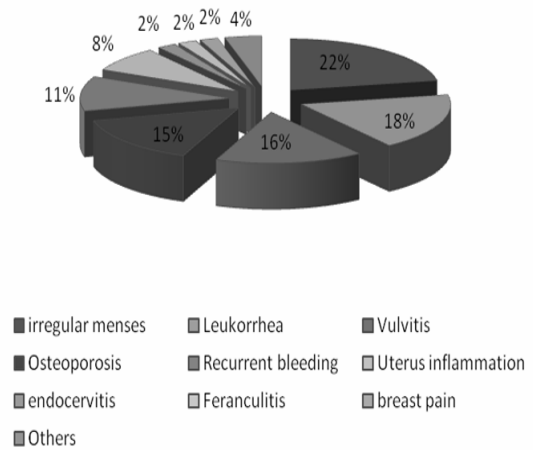
**RESULTS AND DISCUSSION**

One hundred prescriptions were audited to find out the current trend in category of medicines usage in gynecological department and cost benefits availability to the patients.

**[1] Prevalence of Gynaecological Diseases /Related Complication and Prescribing Pattern in Different Disease States.**

**(A) Prevalence of gynecological disease**

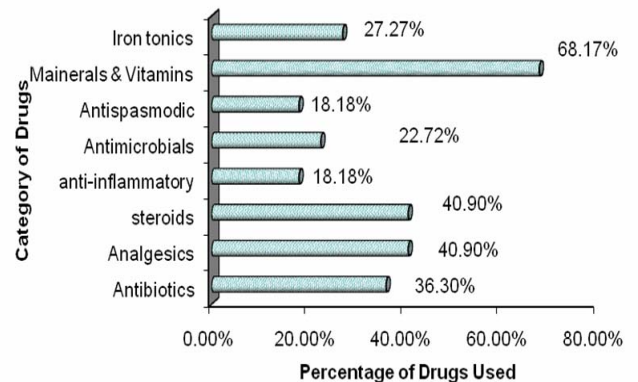
Out of 100 patients, 22 % were of irregular menses, 18 % of leucorrhoea, 16 % of vulvitis, 15 % of osteoporosis, 11 % of recurrent bleeding, 8 % of uterus inflammation, 2 % of endocervitis, 2 % of ferunculitis, 2 % of breast pain and 4 % of other diseases. (Fig. 1)



**Fig. 1: Prevalence of Gynaecological Diseases / Related Complications**

**(B) Prescribing Pattern in Irregular Menses**

For the treatment of irregular menses gynaecologist prescribed antibiotics to 36.3 % patients, analgesics to 40.90 %, anti-inflammatory to 18.18 %, antimicrobials to 22.72 %, steroids to 40.90 %, antispasmodic to 18.18 %, iron tonics to 27.27 % and mineral & vitamins to 68.17 % patients (Fig. 2)



**Fig. 2: Prescribing Pattern in Irregular Menses**

**(C) Prescribing Pattern in Leucorrhoea**

Maximum patients those who were suffered from leucorrhoea were prescribed antibiotics to 66.6 % patients, antimicrobials

to 66.66 %, steroids to 16.66 %, iron tonics to 11.15 % and mineral & vitamins to 50 % patients. (Fig. 3)

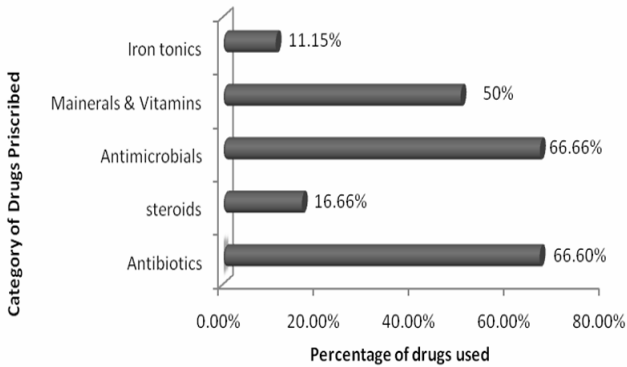


Fig. 3: Prescribing Pattern in Leukorrhea

**(D). Prescribing Pattern in Vulvitis**

In the treatment of vulvitis 87.5 % patients treated by antibiotics, analgesics were prescribed to 75 %, antimicrobial to 12.5 %, Anti-inflammatory 6.25 %, steroids 12.5 %, anti-allergic 6.25 %, iron tonics 12.5 %, minerals & vitamins 93.75 %. (Fig. 4)

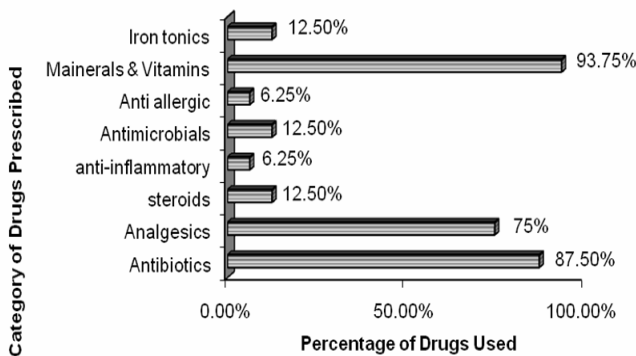


Fig. 4: Prescribing Pattern in vulvitis

**(E) Prescribing Pattern in Osteoporosis**

For the treatment of osteoporosis, gynecologist prescribed antibiotics to 6.66 % patients, analgesics to 60 %, antimicrobials to 33.3 %, iron tonics 53.33 % and minerals & vitamins to 100 % of patients. (Fig. 5)

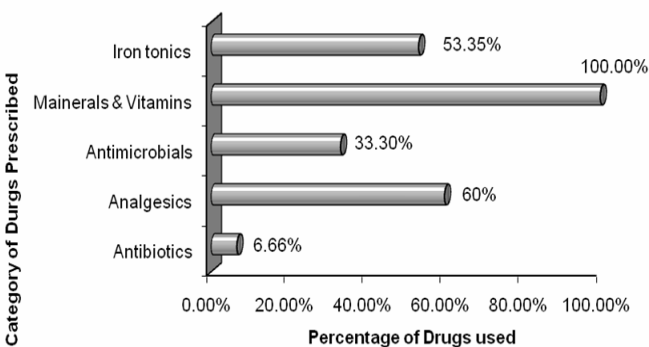


Fig. 5: Prescribing Pattern in Osteoporosis

**(F) Prescribing Pattern in recurrent bleeding**

To treat recurrent bleeding gynaecologists prescribed antibiotics to 36.36 %, analgesics to 45.45 %, antimicrobials to 36.36 %, steroids 54.54 %, iron tonics 63.63 % and minerals& vitamins to 63.63 %. (Fig. 6)

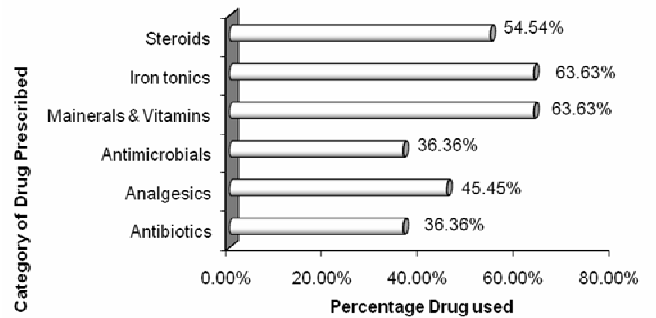


Fig. 6: Prescribing Pattern in recurrent bleeding

**(G) Prescribing Pattern in Uterus Inflammation**

Prescribing pattern in treatment of uterus swelling were antibiotics to 87.5 %, analgesic to 87.5 %, antimicrobials 62.5 %, steroids 25 %, iron tonics 25 %, mineral & vitamins were prescribed to 87.5 % of patients. (Fig. 7)

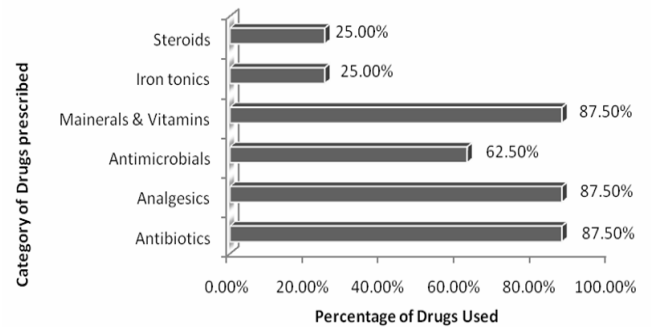


Fig. 7: Prescribing Pattern in Uterus Inflammation

**(H) Total Prescription Pattern**

Out of 100 patients, antibiotics were prescribed to 47 %, analgesics to 56 %, antimicrobials to 42 %, anti-inflammatory to 6 %, anti-allergic to 6 %, antispasmodics to 4 %, steroids to 23 %, minerals and vitamins to 80 % and iron tonics to 39 %. (Fig. 8)

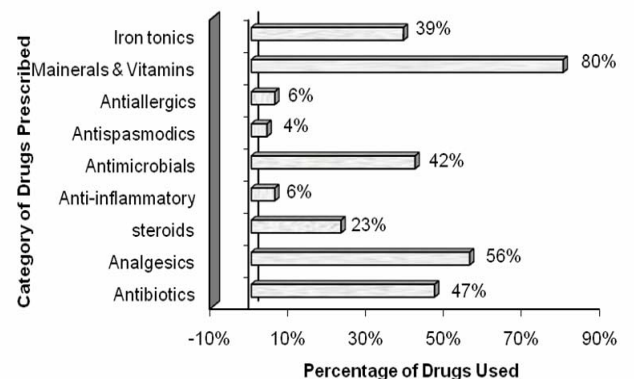


Fig. 8: Total Prescription Pattern

**(I) Visiting pattern and patient response of outpatients**

77 % patients were regularly visit to physician while 23 % patients visit occasionally and 79 % of patients were satisfy with their medications and 21 % patients responds negatively on satisfaction.

**[2] Evaluation of Cost Effectiveness (Pharmacoeconomics) In Medicines Provided By Maternity Hospitals**

**(A) Cost Evaluation of Antibiotics**

Most common antibiotics prescribed by physicians were Ampicillin, Ciprofloxacin and Norflox. Medicine provided by hospital had better cost benefits compared to market cost. Ampicillin, Ciprofloxacin and Norflox medicine provided by hospital at 0.29 Rs/unit, 5.32Rs/unit, 02 Rs/unit respectively at low cost compare to market costs. (Fig 9)

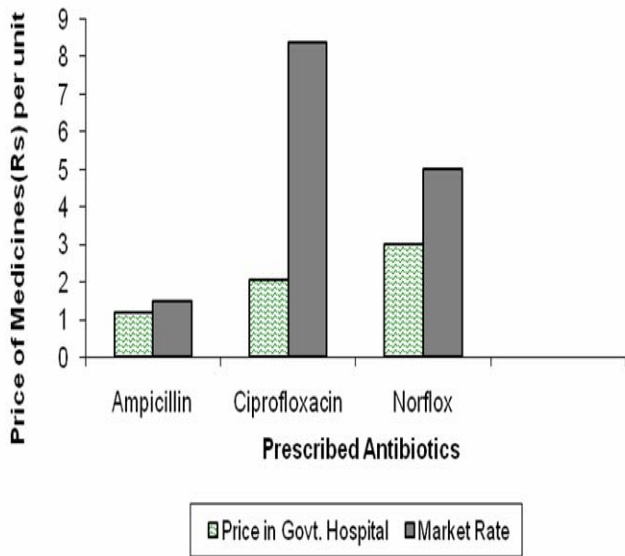


Fig. 9: Cost Evaluation of Antibiotics

**(B) Cost Evaluation of Antimicrobials and Antifungal drugs**

Antimicrobial prescribed by physician were Metronidazole, Fluconazole, Clotrimazole, Soframycin and Betadine had been prescribed at cheeper costs. Cost benefits were 0.52 Rs/unit, 25 Rs/ unit, 24.5 Rs/unit, 2 Rs/ unit and 30.25 % Rs/unit respectively. (Fig. 10)

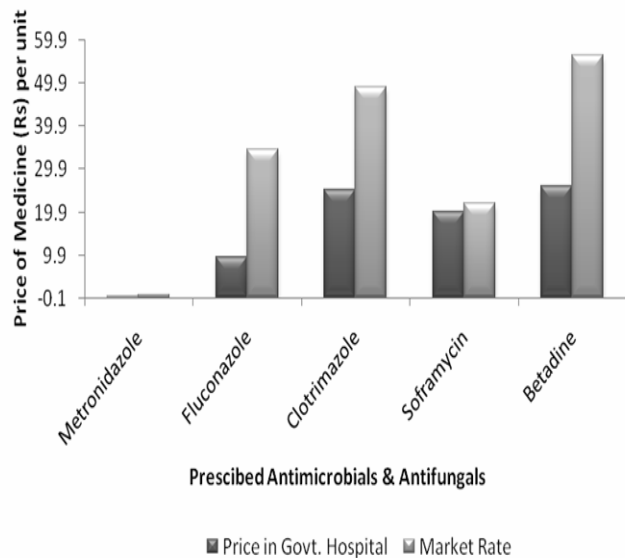


Fig. 10: Cost Evaluation of Antimicrobials and Antifungals

**(C) Cost Evaluation of Analgesics, Antipyretics, and Anti-allergic**

Most common drugs were prescribed in this category were Paracetamol, Brufen, Diclofenac, Voveran, Avil, Citrizine at cost benefits of 0 Rs/unit, 1 Rs/ unit, 0.09 Rs/ unit, 2 Rs/unit respectively. (Fig. 11)

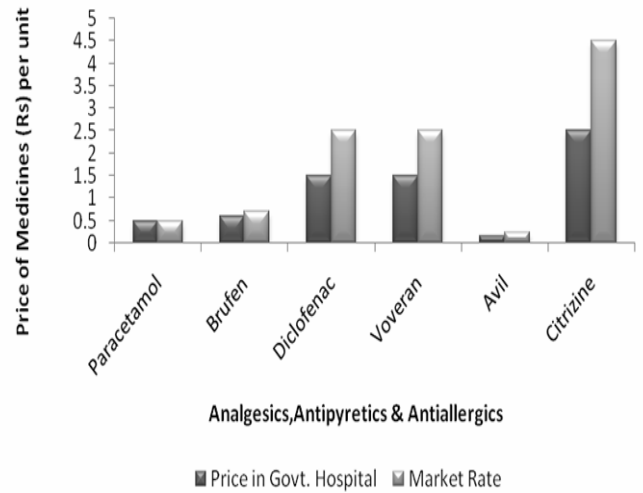


Fig. 11: Cost Evaluation of Analgesics, Antipyretics, Anti-allergics

**(D) Cost Evaluation of Steroidal Drugs:**

Steroidal medicine used for the treatment of gynecological patients were Ethamstylate, Northistorone, Placentrax inj, Infeon inj at cost benefits of 10.11 Rs/unit, 4.07 Rs/unit, 9.18 Rs/unit, 1.75 Rs/ unit respectively. (Fig. 12)

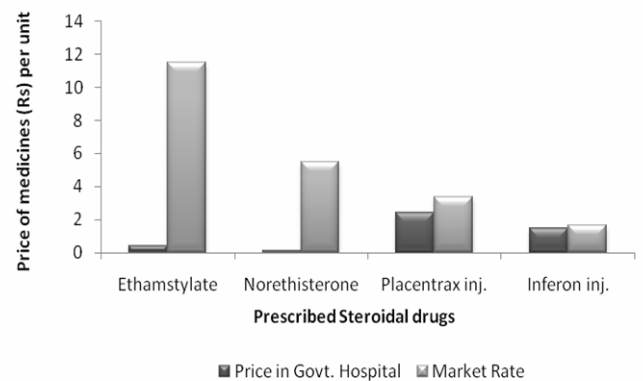


Fig. 12: Cost Evaluation of Steroidal Drugs

**(E) Cost Evaluation of Minerals & Vitamins**

Common drugs in this umbrella were vitamin E, Calcium lactate, B- complexes, Iron tonics and iron tablets at cost benefits of 5.04 Rs/unit, 0.85 Rs/unit, 0.33 Rs/unit, 0.37 Rs/unit respectively. (Fig. 13)

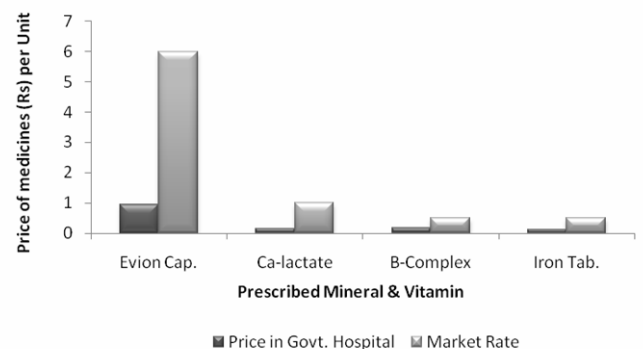


Fig. 13: Cost Evaluation of Minerals & Vitamins

## CONCLUSION

It was observed that the drugs prescribed were correct for the current diagnosis and treatment. There were no any earlier records pertaining to their medical history and treatment regimen already undertaken. Most of the physicians were very much aware about diagnosis and treatment of gynaecological problems.

Physicians are required to pay more attention while prescribing drugs involved in long term therapy such as antibiotics, steroidal drugs etc. Patients on long term drug therapy should undergo proper counseling and regular monitoring regarding the use of drugs. Pharmacoeconomical steps taken up by the Government Hospital is highly appreciated. But care should be taken that the outcome of the therapy is not compromised while providing cost benefits to the patients.

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