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**A PROSPECTIVE OBSERVATIONAL STUDY ON
PRESCRIPTION PATTERN DRUG UTILIZATION AND
AUDIT FOR THE TREATMENT OF WOMEN DISORDERS IN
A TERTIARY CARE HOSPITAL IN RAJAHMUNDRY**

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Abstract:

Introduction: Women and men share many similar health problems but, women also have their own health issues which deserves special considerations. Many diseases affect both men and women alike but some diseases occur in women at high frequency. **Objective:** The objective of the study is to evaluate prescription pattern, drug utilization & audit for the treatment of women disorders in a tertiary care hospital in Rajahmundry. **Methodology:** The study design is a prospective observational study. A total of 86 cases related to women disorders were investigated in a tertiary care hospital in Rajahmundry, Andhra Pradesh. **Inclusion and Exclusion Criteria** include Patients who were hospitalized due to women disorders were enrolled in the study, Women patients of all age groups are included, Patients who are unconscious/mentally retarded and who were suffering with psychiatric diseases are excluded from the study. **Results and Conclusions:** Women disorders are more prevalent in the age groups 21-30 years and 31-40 years. PCOD and Ovarian cyst are the most prevalent diseases among women of 21-40 years of age. Diabetes, hypertension, thyroid, appendicitis, and CVS problems are most commonly observed co-morbid diseases associated with women disorders. Pain, irregular menstruation, bleeding with clots and heavy bleeding are commonly observed clinical manifestations. 5. For all women disorders hormones, anti-microbials, vitamin and mineral supplements are prescribed. Among the hormones Human chorionic gonadotropin (HCG) 5000units, Allylsteronol 5mg, Medroxy progesterone 5mg are prescribed to a large extent. Among the anti-microbials metronidazole 100mg, ceftriaxone 250mg are prescribed widely. Only 3 out of 12 hormones and 8 out of 16 anti-microbials were as suggested by WHO. Drugs other than those suggested by WHO are also used to a large extent in the hospital. Hence, it is suggested that the WHO suggested Essential drugs be prescribed in the hospital for better patient care, safety and efficacy.

Key words: Prospective observational study, Prescription patters, Drug utilization, Prescription audit, Women disorder.

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INTRODUCTION:

Women and men share many similar health problems but, women also have their own health issues which deserves special considerations [1,2]. Many diseases affect both men and women alike but some diseases occur in women at high frequency. For example gall stones are 3-4 times more common in women than men .Other conditions in women more often than men include irritable bowel syndrome and urinary tract infections, anaemia. Women more likely to show signs of depression and anxiety than men. Urinary tract infections include cystitis, (bladder infection), kidney infection (Pyelonephritis) are significant health problems especially effect women. Kidney is the leading cause for high blood pressure (Hypertension) and after 50years of age hypertension is more common in women than men [3].

Women have unique health issues and some health issues affect both men and women differently. Unique issues include pregnancy, menstruation, birth control, menopause, and condition of the female organs. Womens can have healthy pregnancy by getting early and regular prenatal care. Women are more likely than men to have thyroid diseases right after pregnancy and after menopause. Also autoimmune diseases are more common in women than men (For example multiple sclerosis, GRAVE'S disease, rheumatoid arthritis, osteoporosis etc.). Autoimmune disorders afflict at least 12 million, 3/4 of them shown are women. Approximately, 2/3 suffers with rheumatoid arthritis. Osteoporosis is condition which decrease bone density and occurs more frequently in women than in men. It is a major health concern for women. One of every 2 women over 50 years of age will suffer with fracture related to osteoporosis. Certain cancers are of specific concern to women. These include cancer of the female organs such as breast, cervix, uterus and ovary and also pancreas, colorectal cancer and lung cancer.

For about 40 years of her life a women experiences normal phenomenon called menstrual cycle .Most women do not have difficulties during the first half of their menstrual cycle, on further there may be problems such abdominal pain and pelvic pain. During the second half of the cycle, women may experience pre menstrual syndrome (PMS) and may have menstrual cramps at the onset of menstrual flow. Approximately 70-90% of women suffer from pre menstrual syndrome .PMS symptoms include irritability, nervousness, cramps, bloating and headache. A particular severe condition, pre menstrual dysphoric disorder (PMDD) is even more troublesome than PMS. Poly cystic ovarian syndrome (PCOS) is a multifaceted disease[4,5] with a prevalence of 5-10% .It is the

most universal endocrine malfunctions in women in their fertile age .Its clinical manifestation includes menstrual irregularities, hirsutism, hyperandrogenism, metabolic imbalance.

Most of the women will experience ovarian cyst more frequently during reproductive years however, ovarian cyst can affect women at any age. In some cases ovarian cyst causes pain and bleeding. 18% of the women suffering with ovarian cyst [6]. Approximately 41,000 women under vent surgery including 13% of ovarian cyst. The highest prevalence of Dysfunctional uterine bleeding (DUB) was seen between the age of 25-34 years in women and incidence is high in reproductive age groups.

The objective of the study is to evaluate prescription pattern, drug utilization & audit for the treatment of women disorders in a tertiary care hospital in Rajahmundry, Andhra Pradesh.

METHODOLOGY:

The study design is a prospective observational study. A total of 86 cases related to treatment of women disorders were investigated in a tertiary care hospitals in Rajahmundry. The study is conducted during January 2017 to April 2017.

Inclusion and Exclusion Criteria:

1. Patients who were hospitalized due to women disorders were enrolled in the study.
2. Women patients of all age groups are included.
3. Patients who are unconscious/mentally retarded and who were suffering with psychiatric diseases are excluded from the study.

Sources of Data:

The data sources include patient case sheets, prescriptions issued and discharge medication sheet, WHO guidance on essential drugs and by interacting with physicians and patients. The study protocol is approved by Institutional Animal Ethics Committee

RESULTS AND DISCUSSION:

The objective of the study is to evaluate prescription pattern, drug utilization & audit for the treatment of women disorders in a tertiary care hospital in Rajahmundry, Andhra Pradesh. Audit is a review and the evaluation of the healthcare procedures and documentation for the purpose of comparing the quality of care which is provided with the accepted standards. Prescription audit consists of monitoring, evaluating and if necessary, suggesting modifications in the prescribing practices of medical practitioners [7].

A Total of 86 cases related to women disorders are studied. The demographic details related to age and diseases diagnosed are given in Table-1. Women disorders are more prevalent in the age groups 21-30 years (41.8%), and 31-40 years (24.4%). The diseases diagnosed in the age group 21-30 years

include the diseases diagnosed are PCOD - (25%), LSCS- (22.22%), Normal delivery - (13.88%), Bulky uterus+ PCOD+ ovarian cyst -(11.11%), Ovarian cyst-(11.11%), Abortion-(5.55%),Tubularsterilization-(2.77%),Tubular recanalisation-(2.77%) ,Multiple fistula-(2.77%), Peripartum cardiomegaly- (2.77%). In the age group 31-40 years include the diseases diagnosed are Ovarian cyst - (38.09%), DUB + ovarian cyst+ endometrial hyperplasia-(19.04%), Ovarian cyst + bulky uterus+ fibroids - (9.52%), LSCS- (9.52%), PCOD - (4.76%), Normal delivery- (4.76%), Bulky uterus + PCOD- (4.76%), Mild endometriosis-(4.76%), Anaemia + UTI-(4.76%). PCOD and

Ovarian cyst are the most prevalent diseases among women of 21-40 years of age.

The co-morbid diseases associated with various women disorders along with their percentage occurrence are listed in Table-2. Most commonly observed co-morbid diseases associated with women disorders include diabetes, hypertension, thyroid, appendicitis, and cvs problems. For the treatment of co-morbid diseases drugs such as pioglitazone and metformin (15mg /500mg), metformin(500mg), insulin(5units), amlodipine (5mg), atenolol (50mg), enalapril (5mg), levothyroxine (25mcg), thyroxine sodium (50mcg),and aspirin (150mg).

Table 1: Demographic Detail Related to Age and Disease Diagnosed.

S.NO	Age group (years)	No. of cases (%)	Disease diagnosed, No. of cases (% cases)
1.	<20	13 (15.11)	LSCS-2 (15.38) Dysmerrhoea-1 (7.69) amenrrhoea-4 (30.76) PCOD-2 (15.38) DUB-1 (7.69) Endometriosis-3 (23.07)
2.	21-30	36 (41.86)	Ovarian cyst- 4 (11.11) Pcod-9 (25) LSCS-8 (22.22) Normal delivery -5 (13.88) Bulky uterus+ PCOD+ ovariancyst - 4 (11.11) Abortion -2 (5.55) Tubular sterilization-1 (2.77) Tubular recanalisation-1 (2.77) Multiple fistula-1 (2.77) Peripartum cardiomegaly-1 (2.77)
3.	31-40	21 (24.41)	Ovarian cyst-8 (38.09) Pcod-1 (4.76) LSCS-2 (9.52) Normaldelivery-1 (4.76) DUB+ova.cyst+end.plasia-4 (19.04) Ova. cyst + bulky uterus + fibroids -2 (9.52) Bulky uterus +PCOD-1 (4.76) Mild endometriosis-1 (4.76) Anaemia+UTI-1 (4.76)
4.	41-50	12 (13.95)	Breast cancer -1 (8.33) Ovarian cyst-4 (33.33) DUB + Ova. Cyst + endometrial hyperplasia-2 (16.66) Bulky uterus+Fibroids-4 (33.33) Bulky uterus +fibroids+ova.cyst-1 (8.33)
5.	>50	5 (5.81)	Ova.cyst-1 (20) Bulky uterus+fibroids+endometrium-2 (40) DUB+ Haemorrhoids-1 (20) UTI + Anaemia -1 (20)

Table 2: Co-morbid Diseases Associated with Various Women Disorders.

Women disease (cases)	Co-morbid disease	No. of cases (%)	Treatment	Dose
Ovarian cyst (17/86)	Hypertension	2 (11.76)	T. Amilodipine	5mg
	Diabetes/Hypertension	3 (17.64)	T. Amilodipine T.Pioglitazone+ metformin	5mg 1tab
	Thyroid	1 (5.88)	T. levothyroxine	25 mcg
	CVS problems	2 (11.76)	T. Aspirin	150 mg
	Appendicitis	2 (11.76)	appendectomy	
	Renal calculus	1 (5.88)		
PCOD (12/86)	Thyroid	1 (1.16)	T. levothyroxine	25 mcg
	Diabetes/Hypertension	1 (1.16)	T. Atenolol T. metformin	50mg 500 Mg
	Renal calculus	1 (1.16)		
	Appendicitis	2 (16.66)	appendectomy	
Breast cancer (1/1)	Diabetes	1 (100)	Insulin	5units
Bulky uterus+ Ova.cyst + PCOD+ Fibroids (15/86)	Thyroid/ CVS problems	2 (13.33)	T.thyroxinesodium	50 Mcg
	Diabetes/Hypertension /Thyroid	1 (6.66)	Insulin T.Enalapril T.Thyroxinesodium	5units 5mg 50 Mcg
	Hypertension	2 (13.33)	T.Enalapril	5mg

Clinical manifestations observed along with their percentage occurrence are given in Table-3. Pain (81.33%), irregular menstruation (58.13%), bleeding with clots (39.53%) and heavy bleeding (34.88%) are commonly observed clinical

manifestations (symptoms). The laboratory diagnostic test performed on women patients are listed in Table- 4. Majority of tests performed on all the women patients to understand the disease status and condition.

Table 3: Clinical manifestations Observed in Women Patients

S.NO	Clinical manifestations	No .of cases	%
1	Regular	18	20.93%
2	Oligomenorrhea / Irregular	50	58.13%
3	White discharge / leucorrhea	10	11.62%
4	Heavy bleeding / metrorrhagia	30	34.88%
5	Spotting	15	17.44%
6	Breast pain	2	2.32%
7	Dysmenorrhea / pain	70	81.33%
8	Amenorrhoea	2	12.32%
9	Clots	34	39.53%

Table 4: Diagnostic Tests Performed

S.NO	Laboratory Test	No. of cases	%
1.	Vital signs	86	100%
2.	Ultrasonography	80	93.02%
3.	Urine analysis	45	52.33%
4.	Hormonal test	84	97.67%
5.	TIFFA scan	20	23.25%
6.	Laparoscopy	40	46.51%
7.	Glucose test	24	27.90%
8.	Urine pregnancy test	30	34.88%
9.	Mammography	2	2.32%
10.	Hysterosalpinogram	41	47.67%
11.	Haematological tests	86	100%
12.	PTT	5	5.81%
13.	Follicular study	58	67.44%

The drugs used for the treatment of women disorders along with doses are given in Table-5. In all most all cases hormones, anti-microbials, vitamin and mineral supplements are prescribed. Among the hormones Human chorionic gonadotropin (HCG) 5000units (95.34%),

Allylsteronol 5mg (93.2%), Medroxy progesterone 5mg (90.69%) are prescribed to a large extent. Among the anti-microbials metronidazole 500mg (30.23%), ceftriaxone 250mg (26.74%) are prescribed widely.

Table 5: Drugs Prescribed for Women Disorders in the Hospitals

S.NO	Drugs used	No. of cases	%
Hormonal therapy			
Mono therapy			
1.	Clomiphene citrate 50mg	15	17.44
2.	Medroxy progesterone 5mg	78	90.69
3.	Dydrogesterone 10mg	45	52.32
4.	Allylsteronol 5mg	80	93.2
5.	HCG 5000units	82	95.34
6.	Ovacet forte 1 tab	50	58.13
7.	Cloprostenol 250mg	10	11.62
8.	Misoprostol 800mcg	2	2.32
9.	Carboplast 250mcg	5	5.81
Combinational therapy			
1.	Ethinylestradiol (0.1mg) / levonorgesterol (0.25mg) Or (Cyproteroneacetate (2mg)/ ethinylestradiol (0.035mg)	2	2.32
2.	Desogestrel (0.15mg)/ethinylestradiol (0.035 mg)	2	2.32
Anti-microbials			
1.	Ceftriaxone (250mg)	23	26.74
2.	Norfloxacin (400mg)	2	2.32
3.	clavulanic acid(125mg)	2	2.32
4.	Cefpodoxime(100mg)	1	1.16
5.	Doxycycline (100mg)	5	5.81
6.	Piperacillin/Tazobactam (2g/0.25g)	1	1.16
7.	Ofloxacin (300mg)	1	1.16
8.	Azithromycin (500mg)	4	4.65
9.	Clindamycin (300mg)	2	2.32
10.	Cefotaxime (250mg)	2	2.32
11.	Ciprofloxacin (500mg)	3	3.48
12.	Cephalexin (250mg)	2	2.32
13.	Cefdinir (300mg)	5	5.81
14.	Metronidazole (100mg)	26	30.23
15.	Amoxicillin / clavulanic acid(500mg/125mg)	5	5.81
16.	Cefpodoxime / dicloxacillin (200mg/500mg)	1	1.16

Vitamins and mineral supplements prescribed along with hormones and anti-microbials include Calcimax(98.33%), Zincovit (98.33%), MHR(91.66%), Protein powder (90%), Livogen(83.33%), Supradyn (66.66%), Raricap forte(41.66%), Folic acid (41.66%), Sandracol (8.33%), Ecobion (3.33%).

When the drugs used with doses are compared with the WHO suggested Essential list of drugs it was observed that only 3 out of 12 hormones and 8 out of 16 anti-microbials were as suggested by WHO. Drugs other than those suggested by WHO are also used to a large extent in the hospital. Hence, it is suggested that the WHO suggested Essential drugs be prescribed in the hospital for better patient care, safety and efficacy.

CONCLUSIONS:

1. Women disorders are more prevalent in the age groups 21-30 years and 31-40 years.
2. PCOD and Ovarian cyst are the most prevalent diseases among women of 21-40 years of age.
3. Diabetes, hypertension, thyroid, appendicitis, and CVS problems are most commonly observed co-morbid diseases associated with women disorders.
4. Pain, irregular menstruation, bleeding with clots and heavy bleeding are commonly observed clinical manifestations.
5. For all women disorders hormones, anti-microbials, vitamin and mineral supplements are prescribed.
6. Among the hormones Human chorionic gonadotropin (HCG) 5000 units, Allylsterol 5mg, Medroxy progesterone 5mg are prescribed to a large extent. Among the anti-microbials metronidazole 100mg, ceftriaxone 250mg are prescribed widely.
7. Only 3 out of 12 hormones and 8 out of 16 anti-microbials were as suggested by WHO. Drugs other than those suggested by WHO are also used to a large extent in the hospital.
8. Hence, it is suggested that the WHO suggested Essential drugs be prescribed in the hospital for better patient care, safety and efficacy.

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CONFLICT OF INTEREST:

Authors declared there is no conflict of interest.

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