

To Evaluate The Outcome Of Metformin With And Without Clomiphene Citrate In Polycystic Ovarian Disease (PCOD) At Tertiary Care Hospital .

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Abstract

Introduction:-Polycystic ovarian disorder (PCOD) is the steady endocrine issue affecting 4-12% of women. Its diagnosis is done on the basis of oligo-ovulation/ anovulation, menstrual disturbances, hyperandrogenism and ultrasound findings. Women with this disease are more insulin resistant. Maternal weight can soundly affect origination. Studies have announced the higher paces of preterm birth, premature delivery and low birth weight in babies destined to hefty versus ordinary weight ladies with PCOD.

Objective: - To determine the outcome of metformin with and without clomiphene **Study design:** - Cross sectional study **Place of study:** Department of Gyn/Obs Unit 2 PMCH Nawabshah **Material and methods:-** This study was done in Department of Gyn/Obs Unit 2 at PMCH Nawabshah. It is a cross sectional study done from February 2016 to July 2017. Only non pregnant ladies from 23 years to 35 years were selected for the study having polycystic ovarian disease diagnosed after history, clinical examination and imaging investigations. **Results:** - Total 37 patients were taken for the study. Metformin was given to 18 (48.64%) patients with Clomiphene citrate in group A and 19 (51.35%) without it in group B. Group A showed ovulation among 16 (88.88%) patients and pregnancy in 17 (94.44%). Whereas in Group B showed ovulation in 14 (73.68%) and pregnancy in 15 (78.94%) patients. **Conclusion:** - It is summed up that metformin with clomiphene citrate showed enormous positive results with increased ovulation improvement and pregnancy in patients suffering from PCOD.

Keywords:-Metformin, Clomiphene Citrate, Preterm Birth, Miscarriage.

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INTRODUCTION:

Polycystic ovarian disease is a disorder of excessive androgens and ovulatory dysfunction due to disruption of Hypothalamus Pituitary axis function. It affects 6 to 20% of women of reproductive age.¹Hyperandrogenism is related with aggravation of hypothalamic-pituitary input, leutinizing hormone hypersecretion, untimely granulosa cell leutinization, abnormal oocyte development and untimely capture of actuated essential follicles.²

The path physiology PCOD entails a phenotype depicting the vicious circle of neuro endocrine, metabolic and ovarian dysfunction. This issue mirrors the connections among numerous proteins and qualities influenced by the epigenetic and ecological variables. This disease develops in early puberty. Recent studies have shown the neuro endocrine involvement in the patho physiology of this disorder effectively.^{3,4}

Typically, this condition presents with hirsutism, irregular menses, chronic anovulation and infertility. The diagnosis of the condition for adolescent girls is done by continuous oligomenorrhoea for the duration of 3 to 4 years post menarche. Clinically, these patients show hyper androgenism in the wake of administering out of different issue

creating sporadic menses. If oligomenorrhoea continues for 2 years, these girls develop risk of developing PCOD.⁵

The laboratory evaluation of this disease is done by thyroid function studies, determination of prolactin, total testosterone, androstenedione, SHBG, DHEAS and 17-hydroxyprogesterone concentrations.⁶ Blood glucose in fasting apart from HbA1c should also be ascertained. Adrenal and pelvic imaging should also be gotten. Insulin resistance, hyper insulinemia, and stoutness are regularly found in ladies with PCOD.^{7,8}

The treatment of this disease includes education about the condition and lifestyle interventions. Mediations ordinarily includes metformin, contraceptive oral preventative pills (COCPs), spironolactone, and neighborhood treatment for hirsutism and acne.⁹ It ought to likewise incorporate administration of co-morbidities, standard followup and furthermore an arrangement for change to grown-up care suppliers.¹⁰

Metformin is the noteworthy medication for the treatment of PCOD. It is normally utilized in youthful age gathering. It effectively affects BMI and menstrual cycles. COCPs are related with progress in menstrual inconsistency and acne.^{11,12}

The justification of our examination is to assess the result of medicinal administration of polycystic ovarian disease.

Material and Methods:-

This study was conducted in Department of Gyn/Obs Unit 2 at PMCH Nawabshah. This is a tertiary care hospital receiving the patients from all over sindh and other provinces. It is a cross sectional study done from February 2016 to July 2017. Total 37 patients were included in this study. All the patients were taken from Gyn/Obs OPD and Emergency center..

Only non pregnant ladies from 23 years to 35 years were selected for the study having polycystic ovarian disease diagnosed after history, clinical examination and imaging investigations. The patients excluded from the study included tubal blockage, anatomical defect in uterus, subnormal level in husband semen analysis, goiter, hyper prolactinemia, BMI >30 and age <22 and > 35 years.

A complete history and clinical examination was done. Blood CP, blood sugar, blood urea, serum creatinine, urine DR, HBsAg, AntiHCV, LFT and PT, APTT. Imaging investigations particularly Ultrasound was also gotten to see the condition of ovary and number/size of cysts in the ovary.

RESULTS:-

Total 37 patients were taken for the study. All patients aged from 23 to 35 years. 10 (27.02%) patients age was from 23 to 28 years. 22 (59.45%) were from 29 to 31 years. 5 (13.53%) patients age ranged from 32 to 35 years. Average age was 31 years as is shown in table 1 below.

Metformin was given to patients. They were divided into two groups viz Group A and Group B having number of patients 18 and 19 respectively. Figure 1

It was given to 18 (48.64%) patients with Clomiphene citrate in group A and 19 (51.35%) without it in group B. The drug was given with dose of 850mg BD or 500 mg TDS. Outcomes were excellent among patients using metformin with clomiphene citrate. Group A showed ovulation among 16 (88.88%) patients and pregnancy in 17 (94.44%). Whereas in Group B showed ovulation in 14 (73.68%) and pregnancy in 15 (78.94%) patients. Table 2 and 3

The side effects of the drug metformin were found among the patients but these were of little significance that were dealt with accordingly table 4.

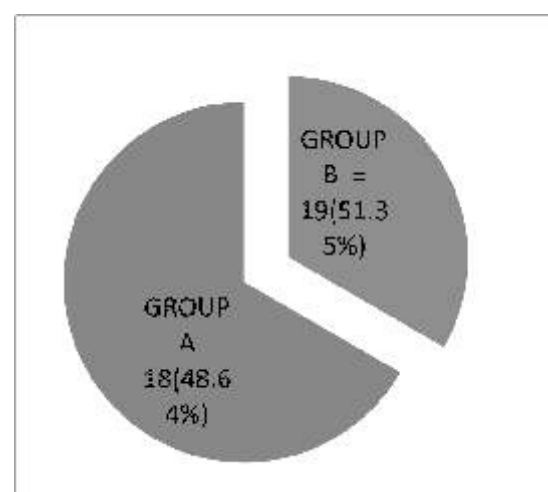


Table 1 AGE DISTRIBUTION..

S.NO:	AGE IN YEARS	NO OF PATIENTS	%
1	23-28	10	27.02%
2	29-31	22	59.45%
3	32-35	05	13.53%
TOTAL	23-35	37	100%

Table 2 GROUP A OUTCOMES OF METFORMIN WITH CLOMIPHEN CITRATRE

S NO	RESULTS	N	%
1	OVULATION	16	88.88%
2	PREGNANCY	17	94.44%

Table.3 GROUP B OUTCOMES OF METFORMIN WITHOUT CLOMIPHEN CITRATRE

S NO	RESULTS	N	%
1	OVULATION	14	73.68%
2	PREGNANCY	15	78.94%

Table 4: SIDE EFFECTS OF METFORMIN

S.NO:	SIDE EFFECTS	N	%
1	Anorexia	5	13.51%
2	Nausea	3	8.10%
3	Diarrhea	1	2.70%
5	Hypoglycemia	0	0%
	Pre eclampsia	0	0%
TOTAL		8	21.62%

Discussion

Metformin is the single medication utilized as insulin sensitizer in polycystic ovarian disorder (PCOS). It is generally utilized in teenagers aged from 15 to 19 years. It is generally prescribed with way of life changes.¹³ Metformin effectively affects BMI and menstrual cycles. Multiple observational studies have been done which concluded that metformin has short term beneficial effects in obese patients. The dose given to patients is 1000 to 2000 mg daily. Major side effect in studies shown is mild GI distress. In our study, patients have 2.7% GI disturbance in form of diarrhoea.¹⁴

The side effects of Metformin can be reduced by starting the drug with low dose. Metformin at a dose of 1700-2000 mg/d is associated with greater improvement in menstrual irregularity and acne. Metformin and oral contraceptive has similarly affect hirsutism, triglycerides and HDL cholesterol.¹⁵

Metformin decreases the gluconeogenesis and lipid synthesis resulting in decrease in level of glucose and insulin. It directly increases insulin sensitivity in cells and it directly affects the ovary. It increases the reproductive outcomes for women with PCOD. It has also effect on serum androgen levels so that menstrual cycle may be regularised and is effective in achieving ovulation with clomiphene citrate or without it. In our study, it is proved that metformin has improved ovulation. Metformin with clomiphene citrate has resulted in 88.8% ovulation and without clomiphene citrate the ovulation occurred in 73.68%.¹⁶

A study done on 143 anovulatory women in UK with BMI of 38kg/m² showed no considerable effect on weight reduction. Many studies have been conducted on metformin and clomiphene citrate. legro et al included 626 women in study and concluded that live births were 7.2%, 22.55 and 26.8%. Higher rates of ovulation and clinical pregnancy were noted in these investigations. Same was found in our examination

moreover. A few investigations demonstrated metformin alone as first line treatment for the treatment of anovulatory and fruitless women.¹⁷

An examination done in Dutch on 228 ladies with PCOS were treated with metformin and clomiphene citrate and in addition to fake treatment. There was no noteworthy distinction in ovulation results. Moll et al in his examination done on utilization of metformin finished up the higher paces of unnatural birth cycle rates however this investigation is inverse to greater part of concentrates that indicated no distinction in pregnancy loss.¹⁸

The utilization of metformin is continuously connected with some reactions especially sickness, heaving and other gastrointestinal aggravations. Our examination indicated that anorexia was found in 13.51% patients and queasiness was seen in 8.10% and diarrhoea in 2.70%.¹⁹

Conclusion:-

In short, it is concluded that metformin with clomiphene citrate showed enormous positive results with increased ovulation improvement and pregnancy in patients suffering from PCOD.

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