



CODEN [USA]: IAJPBB

ISSN : 2349-7750

**INDO AMERICAN JOURNAL OF  
PHARMACEUTICAL SCIENCES**

SJIF Impact Factor: 7.187

<http://doi.org/10.5281/zenodo.4147534>Available online at: <http://www.iajps.com>

Research Article

**COMPARISON OF PREGNANCY OUTCOMES IN INFERTILE  
WOMEN WITH POLYCYSTIC OVARIAN SYNDROME****Dr. Attia Bukhari<sup>1</sup>, Dr. Lubna Munir<sup>1</sup>, Dr. Laraib Iqbal<sup>1</sup>**<sup>1</sup>Tehsil Headquarters Hospital Taunsa Sharif, District Dera Ghazi Khan**Article Received:** August 2020**Accepted:** September 2020**Published:** October 2020**Abstract:**

*This present study aimed to investigate the pregnancy outcomes in infertile women with polycystic ovarian syndrome. This was a prospective study conducted at Nishtar Hospital, Multan during 2019 to 2020. This study was based on the local female population of Pakistan. Total number of selected patients was 50. This study was done according to the rules and regulations of ethical committee of hospital. The patients were selected from the outpatient department of Obstetrics and Gynecology by the researcher. A total of 100 patients with the polycystic ovary syndrome were randomly assigned to a treatment group and the two groups were well matched at baseline. The mean age in this study is 28 years. In Group A, the BMI is 35.1 and in group B the mean BMI is 35.2. In the age group 25-29 years, in group B (Clomiphene Citrate), treatment was found to be efficacious in 24.5% patients, while it was efficacious in 48.1% (n=26/54) in group A (Letrozole) patients. Having a significant p-value 0.013 (<0.05), implying significant better results with Letrozole in terms of successful pregnancies. In conclusion, our study showed that letrozole was superior to clomiphene as a treatment for an ovulatory infertility in women with the polycystic ovary syndrome. Letrozole was associated with higher live-birth and ovulation rates.*

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Please cite this article in press Attia Bukhari et al, *Comparison Of Pregnancy Outcomes In Infertile Women With Polycystic Ovarian Syndrome* ., Indo Am. J. P. Sci, 2020; 07(10).

**INTRODUCTION:**

The polycystic ovary syndrome, which is diagnosed on the basis of hyperandrogenism, oligo-ovulation with associated oligomenorrhea, and polycystic ovaries on ultrasonography, affects 5 to 10% of reproductive-age women and is the most common cause of an ovulatory infertility<sup>1</sup>. Despite the fact that the disorder is a complex regenerative metabolic issue, the hypothalamic pituitary hub has been the objective of first-line ovulation-acceptance treatment. Clomiphene citrate, a particular estrogen-receptor modulator that estranges the negative input of estrogen at the hypothalamus with a resulting increment in ovarian incitement by endogenous gonadotropin, has been utilized for this sign for quite a long time<sup>2</sup>. Fruitlessness is regular in youthful females with polycystic ovarian disorder. Distinctive treatment choices are accounted for in the writing for ovulation enlistment.

Polycystic ovarian disorder is a much of the time happening confusion of female Endocrinopathy. Its prevalence has more noteworthy variety as for indicative criteria utilized. The prevalence ranges from 3% to 20%. There are numerous highlights demonstrating the presence of Polycystic ovarian disorder with most usually displaying attributes like raised clinical and research center records of androgen levels alongside polycystic ovaries on ultrasound<sup>3</sup>. The patients likewise give irregular ovulation indications. The clinical introduction incorporates anomaly in menstrual cycle, hirsutism, fruitlessness, stomach heftiness, hypertension and additionally industrious skin break out and androgen-subordinate alopecia<sup>4</sup>. Insulin obstruction happens freely and all the more as often as possible because of stoutness. The blend of both polycystic ovarian disorder and stoutness firmly irritate the insulin affectability. There are a few medications which are utilized as ovulation enlistment specialists in ladies having the polycystic ovarian disorder<sup>5</sup>. The most normally and ideally utilized medication is clomiphene citrate (CC), which is an estrogen receptor modulator and much of the time utilized as a part of polycystic ovarian disorder ladies from numerous years. It has numerous points of interest of utilization like it has less cost and has more prominent wellbeing profile rather than different medications utilized for this reason. Another fundamental preferred standpoint is its practicality of oral organization<sup>6</sup>.

**Objectives of the study**

This present study aimed to investigate the pregnancy outcomes in infertile women with polycystic ovarian syndrome.

**MATERIAL AND METHODS:**

This was a prospective study conducted at Nishtar Hospital, Multan during 2019 to 2020. Total number of selected patients was 100. This study was done according to the rules and regulations of ethical committee of hospital. The patients were selected from the outpatient department of Obstetrics and Gynecology by the researcher.

The inclusion criteria included patients in the age group of 20-35 years with PCOS and having infertility for more than one year. Patients with hyperprolactinemia, thyroid disorder, male factor, suspected tubal factor, endometriosis, unexplained infertility were not included in the study. Similarly, patients having Uterine and adnexal pathology e.g. leiomyomata, Hyperprolactinemia, FSH>9 ml U/ml (during early follicular phase), peritonitis, genital tuberculosis as per history and/ or having an abnormal pelvic anatomy were not selected in the study. All the women were randomly divided into two equal groups of 50 patients. In group A clomiphene citrate 50 mg was given and in group B letrozole 2.5mg was given. Patients followed with follicle monitoring with Ultrasound on day 8 of the menstrual cycle, endometrial thickness was determined at the greatest diameter. The final outcome measure or efficacy of the drug was measured in terms of conception within three cycles. Basic demographic information including name, age duration of marriage was recorded on a predesigned proforma.

**Statistical analysis**

All the collected data was entered and analyzed through Statistical Package for social sciences

(SPSS version 21).

**RESULTS:**

A total of 100 patients with the polycystic ovary syndrome were randomly assigned to a treatment group and the two groups were well matched at baseline. The mean age in this study is 28 years. In Group A, the BMI is 35.1 and in group B the mean BMI is 35.2. When the study sample was stratified with respect age it was found that there was no significant ( $p$  value > 0.05) in the age group 20-24 years, when the efficacy of Clomiphene Citrate was compared with Letrozole group patients. In the age group 25-29 years, in group B (Clomiphene Citrate), treatment was found to be efficacious in 24.5% patients, while it was efficacious in 48.1% ( $n=26/54$ ) in group A (Letrozole) patients. Having a significant

p-value 0.013 (<0.05), implying significant better results with Letrozole in terms of successful pregnancies. In the age group 30-35 years, in group B (Clomiphene Citrate), treatment was not efficacious in any patient, while it was efficacious in

20.0% in group A (Letrozole) patients having a p-value of 0.041 (<0.05), implying significantly higher rates of successful pregnancies. The stratification on the basis of infertility duration is shown in table 02.

**Table 01: demographic characteristics of patients**

Characteristics	Letrozole group	Clomiphene Citrate group
Age — yr	28.8±4.0	28.9±4.5
Body-mass index†	35.1±9.0	35.2±9.5
Ferriman–Gallwey hirsutism score‡	16.9±8.5	17.0±8.6
Race or ethnic group — no. (%)§		
White	302 (80.3)	288 (77.0)
Black	44 (11.7)	56 (15.0)
Asian	12 (3.2)	12 (3.2)
Mixed race	12 (3.2)	15 (4.0)
Hispanic or Latino	68 (18.1)	60 (16.0)
Fertility history		
Duration of time attempting to conceive — mo	42.5±37.6	40.9±38.0
Previous live birth — no. (%)	73 (19.4)	75 (20.1)
Ultrasonographic findings		
Antral follicle count in both ovaries	46.5±28.5	47.4±27.4
Polycystic ovaries according to modified Rotterdam criteria — no./total no. (%)¶	349/374 (93.3)	354/369 (95.9)

**Table 02: Analysis of outcomes of patients**

Outcomes	Letrozole group	Clomiphene Citrate group	Diff B/W groups	95%CI	p-value
<b>Primary outcome</b>					
Live birth — no. (%)	72 (19.1)	103 (27.5)	8.4 (2.4 to 14.4)	1.44 (1.10 to 1.87)	0.007
Singleton live birth — no./total no. (%)	67/72 (93.1)	99/103 (96.1)	3.1 (-3.9 to 10.0)	1.03 (0.96 to 1.11)	0.49
Twin live birth — no./total no. (%)§	5/72 (6.9)	4/103 (3.9)	-3.0 (-10.0 to 3.9)	0.56 (0.16 to 2.01)	0.49
<b>Birth weight</b>					
No. of infants	71	102			
Mean weight — g	3229.9±715.3	3232.3±657.4	2.4 (-205.6 to 210.4)		0.83
Sex ratio at birth (boys:girls)	0.88 (36:41)	0.65 (42:65)		0.74 (0.41 to 1.33)¶	
<b>Duration of pregnancy</b>					
No. of women	72	101			
Mean duration — wk	38.0±3.6	38.4±2.7	0.4 (-0.6 to 1.4)		0.59
<b>Secondary outcomes</b>					
<b>Pregnancy</b>					
Conception — no. of women (%)	103 (27.4)	154 (41.2)	13.8 (7.1 to 20.5)	1.50 (1.23 to 1.84)	<0.001
Pregnancy — no. of women (%)	81 (21.5)	117 (31.3)	9.7 (3.5 to 16.0)	1.45 (1.14 to 1.85)	0.003
Twin pregnancy — no. of women/total no. of pregnancies (%)	6/81 (7.4)	4/117 (3.4)	-4.0 (-10.6 to 2.6)	0.46 (0.13 to 1.58)	0.32
<b>Time to pregnancy  </b>					
No. of women	90	145			
Mean time — days	85.9±48.8	90.4±44.4	4.5 (-8.0 to 17.0)		0.27
<b>Pregnancy loss</b>					
Pregnancy loss among women who conceived — no./total no. (%)	30/103 (29.1)	49/154 (31.8)	2.7 (-8.7 to 14.1)	1.09 (0.75 to 1.60)	0.65
Loss in first trimester — no./total no. (%)	29/103 (28.2)	45/154 (29.2)	1.1 (-10.2 to 12.3)	1.04 (0.70 to 1.54)	0.85
<b>Ovulation</b>					
Women who ovulated — no. (%)	288 (76.6)	331 (88.5)	11.9 (6.5 to 17.3)	1.16 (1.08 to 1.24)	<0.001
No. of ovulations/total treatment cycles (%)	688/1425 (48.3)	834/1352 (61.7)	13.4 (9.7 to 17.1)	1.28 (1.19 to 1.37)	<0.001

**DISCUSSION:**

We found that letrozole was more effective as a fertility treatment than clomiphene in women with the polycystic ovary syndrome<sup>7</sup>. Ovulation, origination, pregnancy, and live birth were fundamentally more probable after treatment with letrozole. The rate of pregnancy misfortune, the mean pregnancy length and birth weight, and rates of neonatal difficulties (counting oddities) did not vary essentially between treatment gatherings<sup>8</sup>. In spite of the fact that the twin pregnancy rate was bring down with letrozole than with clomiphene, our examination was underpowered to identify a critical between-gather distinction (23% power with an alpha level of 0.05). The general birth-deformity rate was comparative in the two treatment gatherings, however there were four noteworthy inherent peculiarities in the letrozole gathering and one in the clomiphene gathering; this distinction was not huge but rather given the gathering size, we can't preclude a potential contrast<sup>8</sup>.

The two medications utilized as a part of our examination have been assigned by the FDA as pregnancy class X (despite the fact that clomiphene is endorsed for ovulation enlistment). The abnormality composes seen with letrozole in our examination are various, a finding that contends against a typical instrument<sup>9</sup>. Besides, the oddity rates are lower than those announced in a vast population-based examination in Australia that inspected birth-deformity rates after any methods for helped multiplication or ovulation acceptance<sup>10</sup>.

**CONCLUSION:**

In conclusion, our study showed that letrozole was superior to clomiphene as a treatment for an ovulatory infertility in women with the polycystic ovary syndrome. Letrozole was associated with higher live-birth and ovulation rates.

**REFERENCES:**

- Boomsma CM, Eijkemans MJ, Hughes EG, Visser GH, Fauser BC, Macklon NS. A meta-analysis of pregnancy outcomes in women with polycystic ovary syndrome. *Human Reproduction Update*. 2006;12(6):673-83.
- Al-Shaikh SFMH, Al-Mukhatar EJ, Al-Zubaidy AA, Al-Rubaie BJU, Al-Khuzae L. Use of clomiphene or letrozole for treating women with polycystic ovary syndrome related subfertility in Hilla city. *Middle East Fertil Soc J*. 2017;22:105–10.
- David S. Smithson, Tannys D.R. Vause, Anthony P. Cheung. (2018) N o 362 - Déclenchement de l'ovulation en présence d'un syndrome des ovaires polykystiques. *Journal of Obstetrics and Gynaecology Canada* 40:7, 988-998.
- Davinia M White, Kate Hardy, Suzannah Lovelock, Stephen Franks. (2018) Low-dose gonadotropin induction of ovulation in anovulatory women: still needed in the age of IVF. *Reproduction* 156:1, F1-F10.
- Sanne C. Braam, Jan Peter de Bruin, Erato T.I.A. Buisman, Monique Brandes, Willianne L.D.M. Nelen, Jesper M.J. Smeenk, Jan Willem van der Steeg, Ben Willem J. Mol, Carl J.C.M. Hamilton. (2018) Treatment strategies and cumulative live birth rates in WHO-II ovulation disorders. *European Journal of Obstetrics & Gynecology and Reproductive Biology* 225, 84-89.
- Boris Gershman, David P. Guo, Issa J. Dahabreh. (2018) Using observational data for personalized medicine when clinical trial evidence is limited. *Fertility and Sterility* 109:6, 946-951.
- Kurt T. Barnhart. (2018) Scurvy and embryo culture. *Fertility and Sterility* 109:6, 988.
- Uma Deshmukh, Jonathan Black, Javier Perez-Irizarry, Rachel Passarelli, Karen Levy, Amanda Rostkowski, Pei Hui, Thomas J. Rutherford, Alessandro D. Santin, Masoud Azodi, Dan-Arin Silasi, Elena Ratner, Babak Litkouhi, Peter E. Schwartz. (2018) Adjuvant Hormonal Therapy for Low-Grade Endometrial Stromal Sarcoma. *Reproductive Sciences* 76, 193371911877880.
- Shifu Hu, Qiong Yu, Yingying Wang, Mei Wang, Wei Xia, Changhong Zhu. (2018) Letrozole versus clomiphene citrate in polycystic ovary syndrome: a meta-analysis of randomized controlled trials. *Archives of Gynecology and Obstetrics* 297:5, 1081-1088.
- Peipei Jin, Yongyong Xie. (2018) Treatment strategies for women with polycystic ovary syndrome. *Gynecological Endocrinology* 34:4, 272-277.