

LETROZOLE WITH FOLLICLE STIMULATING HORMONE VERSUS NOLVADEX WITH THE LATTER IN PATIENTS HAVING POLYCYSTIC OVARIAN SYNDROME UNDERGOING INTRA CYTOPLASMIC SPERM INJECTION

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INTRODUCTION

Poly cystic ovary syndrome: Poly cystic ovary syndrome (PCOS) is a widespread endocrine disease that occurs in 20% of women of reproductive age. Ovarian dysfunction continues to be the main feature which makes this syndrome the major cause of anovulatory associated with infertility. In vitro fertilization is an effective treatment after repeated failure of ovulation induction by clomiphene citrate and gonadotrophin. Aromatase inhibitors (Letrozole) selectively inhibit the conversion of androgens to estrogens in granulosa cells of developing ovarian follicles, resulting in a subsequent increase in intra-ovarian androgens and absence of a rise in estrogens. Tamoxifen (Nolvadex) is a nonsteroidal triphenylethylene antiestrogen is used as an ovulation induction agent in Europe. When used as an ovulation induction agent, tamoxifen was typically administered at 20 to 60 mg for 5 days. In this study we will use oral compounds as Letrozole (aromatase inhibitors) in combination with minimal dose of gonadotropins versus Nolvadex (anti-estrogen) in combination with minimal dose of gonadotropins in PCOS women undergoing ICSI.

AIM OF THE WORK

The aim of the work was to compare between two minimal stimulation protocols: Letrozole with minimal step up gonadotrophins stimulation protocol versus Nolvadex with minimal step up gonadotrophins stimulation protocol in PCOS women undergoing ICSI.

PATIENTS AND METHODS

PATIENTS: Inclusion criteria: PCOS women with:

- 1.Age: 20-35 years with primary infertility.
- 2.Chronic anovulation
- 3.Ultrasonographic evidence of polycystic ovaries

Exclusion criteria:

1. Endocrinological abnormalities.
2. Androgen secreting women.
3. Cushing syndrome.
4. congenital adrenal hyperplasia.
5. Premature ovarian failure.

Patients will be randomized by computer-generated list to receive either Letrozole with minimal dose of gonadotropins with step up protocol or Nolvadex with minimal dose of gonadotropins with step up protocol.

METHODS: Every patient in the study will be subjected to detailed medical history, clinical examination, complete laboratory investigations and ultrasound examination using Trans-vaginal ultrasound.

Stimulation will be started at day 2 of the cycle dividing the patients into 2 groups.

Group A: 10 patients who will take: Letrozole: 5mg tablet 2 times per day for 6 days.

Group B: 10 patients who will take: Nolvadex: 20 mg 2 times per day for 6 days.

Then at day 5 of the cycle: we will give gonadotropins (FSH) by stepping up First 1 vial 75 units of (Highly purified FSH) for 2 days then 1.5 vials for 2 days and finally 2 vials per day till follicles size become 20 or 21 mm beta HCG will be given 10000 iu. Intra-muscular then oocyte retrieval is to be done 35 hours later.

Patients will be evaluated for:

- Rate of ovarian hyperstimulation syndrome.
- Number of follicles.
- Number of oocytes and maturation.
- Fertilization rate.
- Cleavage rate.
- Pregnancy rate.

RESULTS

Table 1: Comparison between the two studied groups regarding pregnancy rate

	Group I (Letrozole gp) “n=10”		Group II (Nolvadex gp) “n=10”	
	No	%	No	%
Pregnancy rate				
No	4	40	2	20
Yes	4	40	4	40
froze all	2.00	20	4.00	40
X²	1.07			
P-value	0.136			

P was significant if ≤ 0.05

X² = Chi square test

N.S. = Not significant

Endometrial thickness in group I ranged from 4-8 with mean value 6.0 ± 1.49 and in group II ranged from 3-7 with mean value 4.60 ± 1.58 . There was statistical significant difference between the two studied groups regarding endometrial thickness on day of HCG administration ($P < 0.05$).

Table 2: Comparison between the two studied groups regarding endometrial thickness on day of HCG administration.

	Group I (Letrozolegp) “n=10”	Group II (Nolvadexgp) “n=10”	t-test	P-value
Endometrium thickness (mm)				
Range	4-8	3-7	2.01	0.028*
Mean	6.00	4.60		
SD	1.49	1.58		

P was significant if ≤ 0.05

T= student t-test

* = Significant difference

CONCLUSION

It was concluded that both Letrozole and Nolvadex should be considered as optional therapies for PCO women. Both of them were effective ovulation induction agents with comparable ovulation and pregnancy rates.