

## **Evaluation of the effect of trans-vaginal ovarian needle puncture on women with polycystic ovary syndrome**

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**Introduction:** Polycystic Ovary Syndrome (PCOS) is a syndrome of ovarian dysfunction showing cardinal features of hyper-androgenism and polycystic ovarian morphology. Many therapeutic strategies have been used to restore ovulation in women with PCOS who are infertile. Ultrasound-guided transvaginal ovarian needle puncture is a new surgical method used to induce ovulation.

**Methods:** This prospective interventional study was conducted in a tertiary care hospital and was performed on 54 women with clomiphene resistant PCOS with primary or secondary infertility divided into two groups. Group I Included twenty-seven patients who received aromatase inhibitors (letrozole 2.5mg) twice daily starting from the 2nd day of menstrual cycle for 5 days, and Follicle Stimulating Hormone (FSH) administered with 75 IU daily from cycle day 3 and maintained for up to the 14th day of the cycle. Group II Included twenty-seven patients who underwent ultrasound- guided transvaginal needle ovarian puncture prior to the induction of ovulation by the same protocol used in group I from the next cycle for 3 months. For all patients, serum FSH, LH, and free Testosterone levels were measured on day 3 of the next menses. All patients were monitored in the early and late parts of the follicular phase. The ultrasound data taken from the day 7 of the menstrual cycle was collected and monitored to determine the ovarian response and follicular growth. All patients were monitored for the mean follicular diameter, number of dominant follicles and endometrial thickness on day of hCG administration

**Results:** The ovulation rate with trans-vaginal ovarian puncture in group II was (84%) which is higher than that in group I (62.5%) with a statistically significant difference. Also, the cumulative pregnancy rate in group II was higher (33.3 %) compared to 15 % in group I. There is a marked decline in LH level in group II which was treated by trans-vaginal ovarian puncture that of group I, and this was reflected on LH/FSH ratio which markedly declined in the group II. Free testosterone showed significant decline in group II.

**Conclusion:** Ultrasound guided trans-vaginal ovarian needle puncture is an effective method for improving the outcome in women with PCOS who are resistant to clomiphene citrate. It resulted in a significant change in baseline hormonal profile level of LH and serum testosterone.

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