

# ADDING L-CARNITINE AND VITAMIN D TO LETROZOLE IN OVULATION INDUCTION IN PCOS PATIENTS

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## Introduction

Carnitine has been also used in the treatment of insulin resistance. Vitamin D has a physiologic role in reproduction including ovarian follicular development and luteinization through changing anti-müllerian hormone (AMH) signalling, follicle-stimulating hormone sensitivity and progesterone production.

## Aim of the work

The aim of this study is to investigate the efficacy of combining l-carnitine with vitamin D added to letrozole in comparison to letrozole only for ovulation induction in infertile women with polycystic-ovarian-syndrome (PCOS) as regards the endometrial thickness, ovulation rate, pregnancy rate, rate of mono- follicular development and time to conception.

## Objective and Methods

Investigation of the efficacy of combining l-carnitine with vitamin D added to letrozole in comparison to letrozole only for ovulation induction in infertile women with polycystic-ovarian-syndrome (PCOS) as regards the endometrial thickness, ovulation rate, pregnancy rate, rate of mono-follicular development and time to conception. During this study, 94 infertile women were enrolled, after consenting each of them and divided into two groups; Regarding first group participants, they received ovulation induction plus oral-carnitine (3g) supplementation combined with 800 IU vitamin D per day for two cycles or till the conception combined with letrozole, while the second group participants received letrozole as 5mg once daily for five days (from day 3 to 7) after spontaneous or progesterone induced bleeding and increased to 7.5mg in the following cycle if ovulation did not occur.

## Results

Number of mature follicles were 29 (61.8%) vs. 19 (39.5%), endometrial thickness  $\geq 7$ mm 30 (63.2%) vs. 19 (39.5%), ovulation rate 29 (61.8%) vs. 19 (39.5%) and pregnancy rate 8 (17%) vs. 3 (6.4%).

Table (1):Distribution of the studied cases according to the TVU parameters (n=94)

| TVU Parameters                    | Group (A) |      | Group (B) |      | t    | P value |
|-----------------------------------|-----------|------|-----------|------|------|---------|
|                                   | n= 47     | %    | n = 47    | %    |      |         |
| Number of mature follicles        | 29        | 61.8 | 19        | 39.5 | 6.02 | 0.027   |
| Endometrial thickness $\geq 7$ mm | 30        | 63.2 | 19        | 39.5 | 6.31 | 0.048   |

t= Paired t-test

p= p value for comparing between the two studied periods

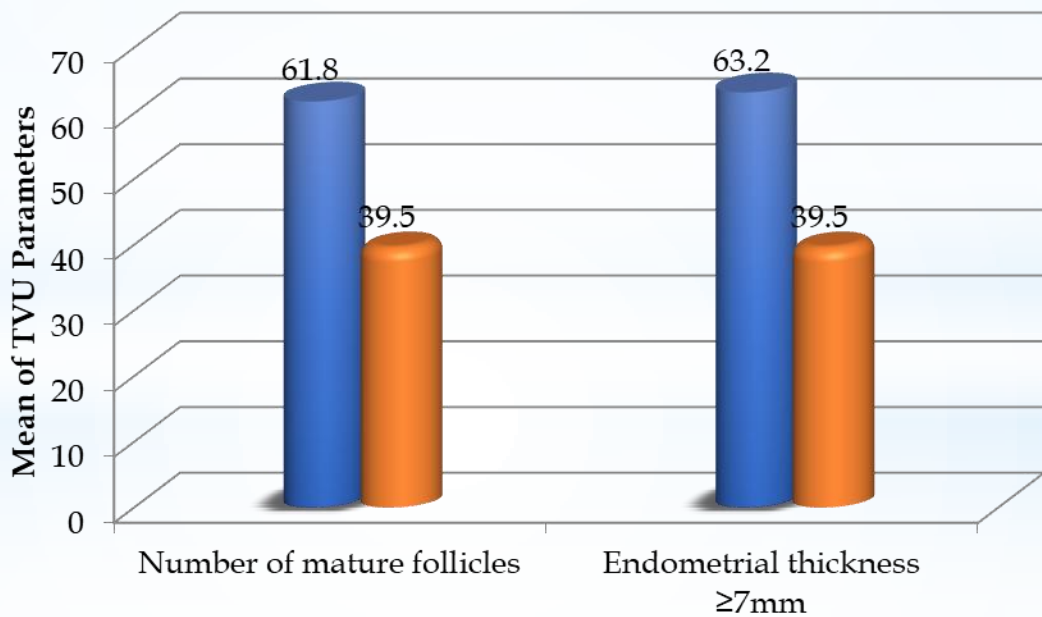


Figure (1):Comparison between the two studied groups according to the numbers of mature follicles and Endometrial Thickness.

Table (2):Distribution of the studied cases according to the ovulation, and pregnancy rates (n=94)

| Outcomes       | Group (A) |      | Group (B) |      | t    | P value |
|----------------|-----------|------|-----------|------|------|---------|
|                | n= 47     | %    | n = 47    | %    |      |         |
| Ovulation Rate | 29        | 61.8 | 19        | 39.5 | 6.82 | 0.016   |
| Pregnancy Rate | 8         | 17   | 3         | 6.4  | 6.55 | 0.021   |

t= Paired t-test

p= p value for comparing between the two studied periods

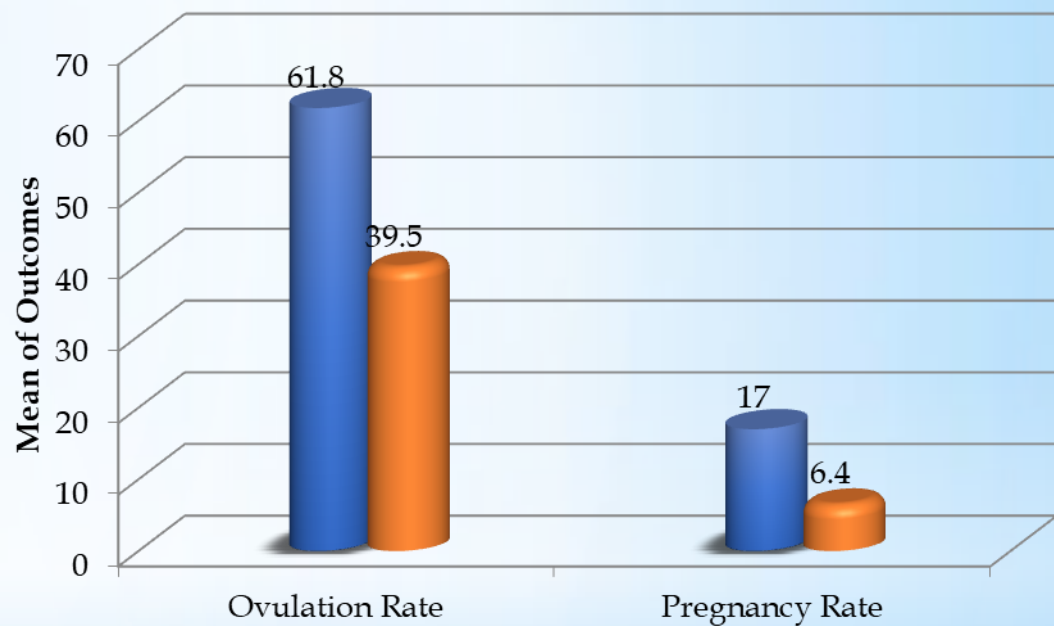


Figure (2):Comparison between the two Studied groups according to the ovulation rate and Pregnancy rate

## Conclusion

Infertile women with polycystic ovarian syndrome disease who received ovulation induction plus oral-carnitine supplementation combined with vitamin D had better outcomes of ovulation induction compared with women who received ovulation induction only. Number of mature follicles was higher and endometrial thickness, ovulation and pregnancy rates were better.