Summary

The success of the implantation depends upon a perfect relationship between good quality embryos and receptive endometrium. Endometrial development in the follicular phase of IVF cycles is driven by estradiol (E2) produced by the ovaries and followed up by the thickness and echogenicity of the endometrium, which are the indicators of its receptivity using ultrasound scanning ***(Farhi et al,. 2000).***

A Good blood supply towards the endometrium is usually considered to be an essential requirement for normal implantation. Endometrial microvascular blood flow determined by an intrauterine laser Doppler technique in the early luteal phase of the cycle preceding an IVF cycle has been shown to be predictive of pregnancy and superior to other conventional parameters predicting endometrial receptivity ***(Jinno et al., 2001).***

The effect of endometrial thickness on pregnancy rates in ART patients has been evaluated by many authors with controversial results. Some authors demonstrated a higher pregnancy rate at certain endometrial thickness ***(Kovacs et al., 2003).***

While others did not show a significant correlation between endometrial thickness and prengnancy rates in IVF ICSI patients ***(Basil et al., 2001)***.

Other authors reported a threshold of <7 mm and/or >14 mm with a significant reduction in implantation rate and preganancy rate ***(Weissman et al., 1999)***.

This study was conducted in the assisted reproduction unit of Obstetric and Gynecology department in Benha University hospital, Egypt. Its was conducted on 40 infertile patients undergoing intracytoplasmic sperm injection (ICSI).

The patients undergoing ICSI were randomly divided into 2 groups:

Group (1): (the study group): It include 20 infertile patients (17 primary and 3 secondary) who received a combination of 400 mg Pentoxifylline (Trental®, sanofi-aventis, Egypt) and 400 IU Tocopherol (Vitamine E, mepaco-medifood –Egypt) twice/day. This combination was continued for 3 months. We then proceeded to the cycle of embryo transfer and the treatment was discontinued at the time of the transfer.

Group (2): (the control group) it include 20 in fertile patients (17 primary and 3 secondary) who did not receive Pentoxifylline and Tocopherol.

The following criteria were fulfilled in all patients:

1- Age: Between 20-35 years.
2- Absence of male factor as a cause of infertility.
3- Pretreatment transvaginal ultrasound that confirmed normal uterine cavity.
4- No previous uterine scars.
5- At least one embryo of good quality was transferred back to the uterine cavity to be included in statistical analysis.

Age of included woman ranged from 20 -35 years old (mean ± SD was 28.9 years ± 4.6 in study group and 29.3 years ±4.4 in control group).

All patients had TVS to measure endometrial thickness before treatment. There were no statistically significant difference between both groups regarding mean endometrial thinckness. TVS was repeated on the day embryo transfer and there were statistically significant differences between both groups regarding mean endometrial thickness.

We found that combined PTX and TCP trearment significantly increased endometrial thickness in the study group ($P<0.001$). The mean increase was 1.2± 0.79mm after 3 months of compined treatment (75±1.6mm before and 8.7±2.1mm after). An increase in mean endometrial thickness in response to combined treatment was observed in 14 patients (70%), no changes in 4 patients (20%) and a little change in 2 patients (10%).

In the control group who did not receive treatment, there were no significant increase in endomertrial thickness ($P>0.05$). The mean increase was 0.71±03mm.

In the study group, combined PTX and TCP increased pregnancy rate compared to control, (12 patients (60%) Vs 8 patients (40%)).