Summary

The pregnancy rate (PR) after embryo transfer is dependent on multiple factors such as embryo quality, endometrial receptivity, and the technique of the transfer itself. Uterine contractions, presence of blood on the catheter, bacterial contamination of the catheter, retained embryos, difficulty of transfer, and the type of the catheter; all influence the success rate of the IVF/ICSI treatment.

In the present study, we prospected to evaluate the influence of the depth of embryo replacement into the uterine cavity on implantation rates after IVF using ultrasonic guidance. In addition we tried to find the other factors, if any contributing in modification of IVF-ET outcome for a fixed distance.

To achieve this target, we studied a series of 45 patients randomly assigned into three groups according to the distance from the tip of the catheter to the endometrial surface at the moment of expulsion of embryos. Each group involved 15 patients.

Group I had transfer distance from the fundus (TDF) of 10 ± 1.5 mm, while group II had TDF of 15 ± 1.5 mm and group III had TDF of20± 1.5mm.

Results of our work have shown that Group III had the best implantation and pregnancy outcome when compared to the other groups. This advantage is particularly statistically significant when group III is compared with group I (p=0.046), but the statistically significant difference wasn't noted when group II is compared with group I or III (p=0.099 and 0.71) respectively.

Further studying of our data has revealed interesting results. Comparative analysis of each group results has been conducted to discover the cofactors responsible for the variation in the outcome of ET in spite of patients belong to the same group.

We found that within every group pregnant patients tend to be younger in age and less obese than others in spite of the fact that this difference didn't reach statistical significance. In addition, conceived cases had shorted duration of infertility and commonest among 1ry infertility.

Further, the successful transfers had higher frequency of good quality embryos. Also, we found that successful cases had significantly higher frequency of first attempt IVF-ET in group II and III.

Also, we found that in the whole series groups, there were higher frequency of difficult transfers in the failed cases with significant difference in all-patients (p=0.027).

Moreover, we found that endometrial thickness and serum E2 concentrations on the day of hCG administration were significantly greater in the group of patients who achieved pregnancy than in the group who did not. This is in agreement with **Zhang X et al.,(2005)** who demonstrated in a study analyzed 897 IVF-embryo transfer cycles that clinical pregnancy after IVF-embryo transfer was positively associated with increased endometrial thickness and peak E(2) concentrations in serum **(Zhang X et al., 2005).**

Our study confirms the previous studies about the role of TDF in affecting outcome in IVF-ET. It should be noted that ET outcome is a result of interacting factors. These factors should be thoroughly studied and a multicenter research is suggested to develop a predictive model incorporating all theses variables.