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## Optimum IVF treatment modality for infertility-related endometriosis patients

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**Introduction:** Infertility and endometriosis association is well known for assisted reproduction technology (ART) specialists. Many treatment modalities have been proposed for endometriosis patients suffering from infertility according to ART clinics variable protocols. Moreover, a closer glimpse on the diverse treatment options ended up that a method was superior to another as per figures presented. A comparison between fresh embryo transfer (ET) after a stimulated IVF cycle and ICSI technology, and an (after thawing) frozen embryo transfer (FrET) is presented in the study to prove the better effective method in a clinical proof of concept analysis. Decreased re-ceptivity of the endometrium and negatively affected oocyte quality and function are factors suggested to decline the potential of ART treatment for infertility due to endometriosis case pa-tients.

**Materials and methods:** A database cohort study was retrospectively conducted, to compare the treatment type for infertility-related endometriosis patients. Inclusion criteria in both groups has been patients diagnosed of infertility and having a tissue sample extracted ended up diagnosed as endometriosis from the lab, no present or history signs of poor response diagnosis in an ongoing or previous reproduction treatment cycle, and patients less than 37 years age. In one group, ovum pick up (OPU) was performed about  $36\pm 2$  hours after receiving hCG injection, which has been administered after showing on U/S to have at least two leading follicles of not less than 17 and not more than 22 mm size in the ICSI group. The other group underwent a preparation cycle without any ovarian stimulation and all frozen embryos were cryopreserved after vitrification method. Embryo transfer (ET) was performed after estrogen-progesterone treatment cycle administration for the frozen ET (FrET) group. The two main groups were having each, two subgroups presenting the endometriosis subgroup of grade I, II and another subgroup of grade III, IV according to AFS scoring. Primary results were calculated according to the clinical pregnancy findings. Results are presented and showed as percent, mean values, standard deviation and confidence interval figures.

**Results:** Since 1999-2012, a total number of 106 endometriosis-related infertility treatment cycles were performed. Of the 106 treatment cycles, a number of 9 cases were cancelled and 53 went through complete treatment process as fulfilled the inclusion criteria. Of those, 38 (71.69%) cycles were offered the ICSI treatment and 16 (27.35%) cycles underwent a FrET treatment me-thod. No statistically significant differences in age, infertility duration time and number of both endometriosis grade subgroups between both the ICSI and FrET group of patients. Mean age for the ICSI treated group is  $32.89\pm 0.73$  and  $33.2\pm 1.18$  in the FrET group treatment cycle, both cal-culated with 95% confidence interval. Positive pregnancy test results were of 5 (13.15%) cases in the ICSI treatment group, and 3 (20%) cases in the FrET treatment group. Endometriosis I, II subgroup presented 21 (55.26%), and subgroup grade III,IV presented 17 (44.73%) cases in the ICSI group cases. In FrET group, 7 (46.66%) cases presented the grade I,II subgroup, and 8 (53.33%) cases were in the grade III,IV endometriosis subgroup cases. Regarding endometriosis grading and pregnancy, we found that in the ICSI group, 3 (14.28%) pregnancies were in the endometriosis grade I,II subgroup and 2 (11.76%) pregnancies were in the grade III,IV subgroup, presenting the figures of 60% and 40% consequently of pregnancy cases in the group. Pregnancy cases in the FrET group were 1 (14.28%) in the grade I, II subgroup and 2 (25%) in the grade III, IV subgroup, and presenting 33.33% and 66.66% consequently of the pregnancy cases in the group.

**Conclusion:** The strategy of applying the frozen-thawed after vitrification of embryos for infer-tility-related endometriosis patients might present a promising treatment option. The study sup-ports the concept of freeze all embryos strategy for those patients presenting at any endometriosis disease stage. However, further larger clinical studies might still be required.

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