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Title:

Number of Supernumerary Euploid Embryos From an IVF Cycle Correlates With an Ongoing Pregnancy Rate After Subsequent Single, Euploid Embryo Transfer (SET).

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Objective:

While ongoing pregnancy rates (OPR) have been shown to be enhanced in women with supernumerary blastocysts, it is unknown how the use of preimplantation genetic screening (PGS) at transfer selection and the presence of supernumerary euploid embryos (SEEs) affect IVF cycle outcome. This study sought to determine how SEE counts affect euploid, single blastocysts transfer cycle outcome.

Design:

Retrospective cohort study

Materials and Methods:

All patients who underwent a euploid SET between July 2011 and April 2016 were included. Cohorts were split into "Implanted" and "Non-Implanted" groups. Patients with <2 euploid embryos at the time of SET were excluded. Ongoing pregnancy rates (OPR) were correlated with SEE counts and corrected for age and diagnosis. Student's t-test, linear and binary logistic regression analyses were performed.

Results:

One thousand ninety-nine cycles were included in the study. Patient demographics did not differ between study cohorts. Overall, patients achieved a 60.6% implantation and 55.5% OPR. Patients who had successful implantation and an ongoing pregnancy (n=610) had similar numbers of oocytes retrieved (17.3 +/-9.8) and blastocysts biopsied (5.9 +/- 4.3) to those who did not (OR 1.008 [95% CI 0.996-1.020], p=0.19 and OR 1.015 [95% CI 0.992-1.039], p=0.21, respectively). SEEs were similar between cohorts (Implanted: 3.70 +/- 3.02; Non-Implanted: 3.57 +/- 3.11) (OR 1.008 [95% CI 0.97-0.049], p=0.68). When the total of SEEs in the Implantation cohort was analyzed, the OPR was significantly increased from 46.0 % to 58.9% when patients had >4 embryos (p =0.0043).



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Conclusions:

Patients with at least one SEE are likely to have a higher ongoing clinical pregnancy rate than patients with only one available embryo. This rate increases with the increased number of vitrified SEEs.

Although patients who incorporate PGS prior to embryo selection during an IVF cycle have high success rates, a boost in supernumerary euploid counts further enhances positive outcome probability.

Support:

None