American Society for Reproductive Medicine 2016 Scientific Congress & Expo
October 15 to 19, 2016 ● Salt Lake City, UT, USA

Title

A High Prevalence of Abnormal Embryos After an IVF/PGS Cycle Should Not Deter Patients From Pursuing a Second Cycle

Authors:
J. Rodriguez-Purata,1 L. Sekhon,1,2 J. A. Lee,1 M. C. Whitehouse,1 E. Cervantes,1 M. Luna,1 C. Briton-Jones,1 T. Mukherjee,1,2 A. B. Copperman,1,2 B. Sandler1,2

Affiliations:
1. Reproductive Medicine Associates of New York, 635 Madison Ave 10th Floor New York, New York, United States, 10022
2. Obstetrics, Gynecology and Reproductive Science, Icahn School of Medicine at Mount Sinai, Klingenstein Pavilion 1176 Fifth Avenue 9th Floor New York, New York, United States, 10029.

Objective:
Preimplantation genetic screening (PGS) remains the most objective selection criterion used by clinicians prior to embryo transfer (ET). Aneuploidy assessment by PGS is suggested, among other causes, to patients of advanced maternal age, repeated implantation failure (RIF), recurrent miscarriage or with severe male factor infertility. Patients who experience an elevated aneuploidy rate after their first cycle find themselves in a challenging position; unsure if pursuing another IVF cycle might attain similar rates. This study sought to evaluate patients with an elevated rate of aneuploidy at first IVF/PGS cycle that completed a second cycle.

Design:
Retrospective cohort analysis

Materials and Methods:
All patients who underwent 2 IVF/PGD cycles in which the first cycle yielded an aneuploidy rate of >80% were included. Cycles with ≤4 embryos biopsied in any cycle were excluded. Demographics and cycle characteristics were studied. Aneuploidy rate in the second cycle was described. A secondary analysis was carried out to identify variables that associated to embryos display a >80% aneuploid rate in second cycle assessment. Student's t-test was used for continuous variables, and the X^2 test was used for categorical variables. Significance was confirmed a $p<0.05$.

Results:
Twenty-six patients (n=52 cycles) met the inclusion criteria. Diagnoses included genetic (n=8), male factor (n=5), ovulatory dysfunction (n=4), DOR (n=3), RPL (n=2), elective freezing (n=2), endometriosis (n=2). All demographic characteristics (age, day 3 FSH, AMH, BMI, oocytes retrieved, fertilized and embryos biopsied) were similar between groups. In the first cycle,

embryo aneuploidy rates were 91.2% (187/205). During the 2nd cycle, the proportion of embryos with aneuploidy was 67.4% (132/196). Three patients (11.5%) presented 100% of aneuploidy in both cycles (34/34). A secondary analysis was carried out comparing patients (n=9) who had ≥80% of the embryos abnormal in the second cycle (94.7% (54/57)) vs. those (n=17) with <80% abnormal (56.1% (78/139). The average age was higher (38.9±4.1 vs. 36.2±4.5) and the average number of embryos biopsied were lower (6.3±5.0 vs. 8.2±3.8) in the former group, although this was not statistically significant. The average number of oocytes retrieved were statistically lower (13.2±5.2 vs. 20.6±6.8, $p<0.05$) in patients with ≥80% of the embryos abnormal in the second cycle. Day 3 FSH (4.3±3.1 vs. 5.9±2.2), AMH (2.1± 2.0 vs. 3.3±3.1) and BMI (22.3±2.2 vs. 24.1±5.4) were similar between groups.

Conclusions:

As a selection tool, PGS continues to improve IVF effectiveness. This study's results demonstrate that patients can be comforted in knowing that their first cycle aneuploidy outcomes are not definite, and, although there is no guarantee, pursuing subsequent cycles might yield high quality embryo.

Support:

None.