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Title:

HOW OFTEN DO PATIENTS UNDERGOING IVF WITH PREIMPLANTATION GENETIC SCREENING HAVE AN EMBRYO SEX PREFERENCE?

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Objective:

Preimplantation genetic screening (PGS) is increasingly utilized by infertility patients/couples to identify euploid embryos and to optimize the likelihood of a successful outcome. Analysis of chromosomal copy number provides preimplantation information regarding embryonic sex chromosomes. While some patients select an embryo based on sex, others select embryos for transfer based entirely on morphologic grade. In a cohort of patients neither requesting sex selection for X-linked disorders nor family balancing, we sought to understand how PGS information influenced patient preferences with regard to embryo selection prior to transfer.

Design:

Retrospective, Observational study

Materials and Methods:

The study included all IVF-PGS cycles from 2012 – 2017 that yielded at least 2 euploid embryos, consisting of at least 1 male and 1 female. All patients included indicated that they did not prefer a specific embryo sex at initial consultation. Patients pursuing IVF solely for the purpose of genetics, sex selection or elective embryo banking were excluded from this analysis. All patients underwent transfer of a single embryo. Patients' electronic medical records were reviewed to ascertain whether patients chose an embryo for transfer based solely on morphologic grading or based on both the morphologic grade and embryo sex.



Results:

A total of 495 IVF-PGS cycles yielding at least 1 male and 1 female euploid embryo suitable for transfer were included. Upon review of the PGS results with the physician and clinical team, 82.63% (n=409/495) opted not to express a preference for the sex of the embryo being transferred. The remaining 17.37% (n=86/495) had a preference for a particular embryo sex. Of the patients who expressed a sex preference, in 68.6% (n=59/86) of cases the patient opted to transfer the best morphologically graded female embryo and in 31.4% (n=27/86) of cases opted for the best morphologically graded male embryo.

Conclusions:

Patients who utilize IVF-PGS cycles are presented with an interesting clinical dilemma: Do they choose to transfer an embryo based solely on morphologic grading, or do they incorporate information regarding the sex of the offspring? In this study, the large majority of infertility patients did not express a sex preference, and were in fact most concerned about transferring an embryo with the highest morphologic grade. In the subset of patients who did express a sex preference, two thirds elected to transfer a female embryo. As IVF-PGS becomes increasingly popular, an increasing amount of genomic and non-genomic information will be available to patients. Future studies should continue to monitor how access to more information may influence patients' family building decision-making.