



AMERICAN SOCIETY FOR
REPRODUCTIVE MEDICINE



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Title:

SERUM ANTI-MULLERIAN (AMH) LEVELS DO NOT PREDICT EMBRYO PLOIDY AFTER COMPREHENSIVE CHROMOSOMAL SCREENING (CCS) OF TROPHECTODERM CELLS DURING PREIMPLANTATION GENETIC SCREENING (PGS)

Authors:

Jorge Rodriguez-Purata, MD1, Martha Luna, MD1, Joseph A Lee, BA1, Michael C Whitehouse, BA1, Enrique Cervantes, MD1, Marlena Duke, Msc, ELD1, Tanmoy Mukherjee, MD1,2, Lawrence Grunfeld, MD1,2, Alan B Copperman, MD1,2 and Benjamin Sandler, MD1,2

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:

Serum AMH concentrations decline with increasing age, constituting a sensitive marker for ovarian aging. On an embryo by embryo basis, it is not clear whether abnormal AMH levels predicts aneuploidy. This study seeks to determine if serum levels of AMH can be associated with the percentage of embryos deemed aneuploid using CCS of trophectoderm cells during PGS.

Design:

Retrospective analysis

Materials and Methods:

Patients who underwent an IVF cycle with PGS for aneuploidy were included in the study. In cases where ≥ 2 AMH measurements were recorded, the lowest level was selected. Serum AMH was measured either by Beckman-Coulter' and/or Diagnostic Systems laboratories' assay, and an AMH level of 1 ng/mL was considered as normal. Embryo's trophectoderm were biopsied on Day 5/6 and 23 chromosome PGS analysis was performed by quantitative PCR. Only embryos with an initial normal/abnormal result were included. We utilized generalized estimating equations (GEE) to understand the impact of AMH on aneuploidy among patients, while controlling for patients' age.

Results:

A total of 142 patients and 749 embryos were analyzed, of which 54.8% (401/749) embryos were euploid. No statistical differences were observed between normal and abnormal embryos in AMH (3.5 ± 4.8 vs. 3.13 ± 4), oocytes retrieved (20.8 ± 12.3 vs. 18.45 ± 11.3), fertilization rate per retrieved egg ($63.4\% \pm 22.3$ vs. $64.1\% \pm 21.2$) or per MII ($79.1\% \pm 21.3$ vs. $79.4\% \pm 19.3$). Statistical differences were



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observed in normal and abnormal cohorts when evaluated for age (35.5 ± 4.3 vs. 37.6 ± 4.9), basal FSH (7.5 ± 3.7 vs. 8.19 ± 2.9), basal AFC (14 ± 8.3 vs. 12.64 ± 7.1) and 2PN (14.5 ± 8.9 vs. 12.31 ± 8.3).

Conclusions:

Our study showed that patients who had abnormal AMH levels produced fewer eggs and fewer embryos, but the embryos did not have an increased incidence of aneuploidy. AMH is a powerful indicator of ovarian reserve and predicts ART outcome, but an abnormal AMH level does not correlate with the chance of any individual embryo being normal or abnormal.

Support:

None.

Table:

Factor	OR	p-value
Age	1.12	0.02
AMH	0.95	0.34