

RELATIONSHIP BETWEEN PATIENT SERUM ANTI-MULLERIAN HORMONE AND EMBRYO QUALITY

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Abstract Body

OBJECTIVE: The purpose of this study was to determine if patient serum anti-Mullerian hormone (AMH) concentrations are associated with the % of good-quality usable blastocysts that develop from a cohort of retrieved oocytes. **DESIGN:** This was a retrospective study set at a university-affiliated fertility center between 2016-2018. **MATERIALS AND METHODS:** IVF patients 22-38 years of age were screened using the following inclusion criteria: regular menstrual cycles of 25-35 days, follicle stimulating hormone <10 mIU/ml, luteinizing hormone <12 mIU/ml, and estradiol <50 pg/ml on day 2-4 of menstrual cycle. Blastocysts were graded according to criteria established by the Society for Assisted Reproductive Technology (SART), and a good-quality usable blastocyst was defined as a Grade A or B blastocyst that was transferred to the uterus or cryopreserved. AMH was defined as low if <1 ng/ml, and high if > 1 ng/ml. The % good quality usable blastocysts that developed from number of oocytes retrieved and from number of fertilized two-pronuclear (2pn) zygotes were calculated. The relationship between AMH and % good-quality usable blastocysts was analyzed by an independent statistician using a two-sample hypothesis test and side-by-side box plot. Statistical significance was set at $p < 0.05$. **RESULTS:** Patients with low AMH levels had fewer number of oocytes retrieved (9.78+/- 6.66, N=69, $p=0.001$) than patients with high AMH levels (14.47+/-6.63, N=161). Patients with low AMH had 24.3% usable blastocysts from total number of oocytes retrieved, and higher AMH patients had 26.2% usable blastocysts from total number of oocytes retrieved (t distribution=0.70, degrees of freedom=132, $p=0.241$). Patients with low AMH had 46.6% usable blastocysts from 2pn zygotes, and patients with high AMH had 47.5% usable blastocysts from 2pn zygotes ($t=0.20$, $df=111$, $p=0.421$). **CONCLUSIONS:** Similar to published literature, we found that higher serum AMH concentrations are associated with more oocytes retrieved. However, no significant relationship was found between serum AMH concentration and the percentage of good-quality usable blastocysts that developed from total oocytes retrieved or 2pn zygotes.