Antimüllerian hormone (AMH) in gonadotropin releasing-hormone antagonist stimulated ICSI cycles

Context: AMH reflects the number of antral and pre-antral follicles present in the ovaries. It is thought to be a predictor of ovarian response. Objective: The main aim of the study was to evaluate the relationship between AMH levels and treatment outcomes in patients undergoing ICSI cycles. Methods: GnRH antagonist cycles over a period of 12 month in a single-center retrospective study. AMH levels were measured at the time of initial presentation. Estradiol (E2), Progesterone (P) and luteinizing hormone (LH) levels were analyzed before oocyte retrieval. The number of mature/immature oocytes (MII/GV/MI) was determined and pronucleus (PN) formation assessed. Patients: 142 consecutive antagonist cycles for ICSI treatment in our clinic were included. For analyses patients were divided into four age groups (I: <30 years, mean 27.97; II: 31 - 35, mean 32.95; III: 36 - 40, mean 38.15 and IV: >40, mean 43.18) Interventions: / Main Outcome Measures: AMH, E2, P, LH levels, PN formation and pregnancy rate. Results: AMH level was strongly correlated to the number of follicles and isolated oocytes and pregnancy rate (Rs=0,315, p<0,01). Linear regression between AMH, E2 level and pregnancy rate revealed a much stronger correlation (Rs=0,504, p<0,001). No correlation between the age of the patients and the percentage of immature oocytes was found but between immature oocytes and AMH (Rs=0,347, p<0,05), E2 (Rs=0,389, p<0,05), LH (Rs=0,367, p<0,05) levels in patients under 36 years of age. Formation of multiple PN and AMH correlated (Rs=0,226, p<0,05), E2 (Rs=0,192, p<0,05), P (Rs=0,185, p<0,05). Conclusions: AMH measurement predicts response to patients undergoing ovarian hyperstimulation for assisted reproduction in an antagonist protocol. It not only correlates with pregnancy rate, but also is related to other parameters determined during stimulation and embryo culture.