ISGE
GYNECOLOGICAL ENDOCRINOLOGY
THE 18TH WORLD CONGRESS
7-10 MARCH 2018 FLORENCE, ITALY

P49. Policystic ovarian syndrome (PCOS) patients with higher body mass index (BMI) have significantly lower level of antimullerian hormone (AMH) and lower response on IVF/ICSI treatment

V Kova? (SI) [1], L Mlakar (SI) [2], M Relji? (SI) [3]

Context. In some PCOS patients with higher BMI, the serum AMH level is surprisingly low, regardless of age. The exact mechanism for this effect is still uncertain. Obese PCOS patients could have affected catabolism of AMH and reduced ovarian potential leading to ovarian dysfunction.
Objective. We investigated if the levels of AMH in PCOS patients with higher BMI are different in comparison to lean PCOS patients and if these differences reflected in IVF/ICSI results.
Methods. A retrospective study at tertiary clinic
Patients. Infertile PCOS patients
Interventions. 154 PCOS patients who underwent IVF/ICSI procedures, divided into two groups according to BMI 30 kg/m2.
Main outcome measurements. Primary outcome was the analysis of differences of BMI, AMH, LH, FSH, patients' age, number of retrieved oocytes, fertilization, cleavage and pregnancy rate, number of used ampoules of gonadotrophins and number of frozen embryos between groups. Second outcome was to determine if AMH was correlated with BMI or LH.
Results. Patients with BMI >30 kg/m2 (n=68) had a significantly lower AMH value (5.7 vs. 7.7; $p<0.05$), LH value (3.8 vs. 5.4; $p<0.05$), number of retrieved oocytes (10.7 vs. 15.7; $p<0.05$), fertilization rate (53.98 vs. 60.4 %, $p<0.05$), and number of frozen embryos (2.1 vs. 3.6; $p<0.05$) compared to patients with BMI <30 kg/m2 (n=86). They used significantly higher number of ampoules of gonadotrophins (28,5 vs. 21,7; $p<0,05$), and had a non-significant lower pregnancy rate (27.9 vs. 34%, NS). The difference in the mean age of women between groups was non-significant (31.27 vs. 32.4; $p=0.08$).
There were significant negative correlations between BMI and AMH ($r = - 0.22$, $p<0.05$) and BMI and LH ($r = - 0,23$; $p<0,05$) and a significant positive correlation between AMH and LH of women ($r = 0.34$; $p<0.05$). Univariate linear regression confirmed a significant negative influence of BMI on AMH (beta = - 0.18; $p = 0.02$) and a significant positive influence of LH value on AMH (beta = 0.34; $p<0.05$). Multivariate linear regression confirmed LH to be the strongest positive prognostic factor for AMH (beta = 0.28; $p<0.05$).
Conclusions. We agree with studies confirming a negative correlation between AMH value and BMI in PCOS patients. A significantly lower AMH value in obese PCOS patients reflected in lower respond to IVF/ICSI treatment, is possibly indicating lower ovarian reserve or ovarian dysfunction, which must be considered before treatment.

[1] University Clinical Centre Maribor, Maribor, [2] University Clinical Centre Maribor, Maribor, [3] University Clinical Centre Maribor, Maribor