Wider implications of the findings: Those who significantly lost weight demonstrated improvement in their reproductive and psychological abnormalities. The weight loss in this study Intervention groups depicted a deviation to a healthy lifestyle that affected their PCOS features. All PCOS patients should seek nutritional intervention in order to prevent further metabolic and reproductive complications.

Trial registration number: N/A.

P-691 New additional biomarker proposal for the diagnosis of polycystic ovary syndrome through serum midkine cut-off value with anti-Müllerian hormone in Turkish population: A prospective study

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Study question: Can midkine (MK) be used as a new additional biomarker with an old conventional biomarker anti-Müllerian hormone (AMH) for the diagnosis of polycystic ovary syndrome in Turkish population?

Summary answer: MK levels were increased in concomitant with AMH levels at the PCOS cases, thus it can be accepted as a new additional biomarker.

What is known already: The abnormally elevated AMH levels in serum and follicle fluid of PCOS patients participate in the major steps of the anovulation, and are related to pathogenesis and pathophysiological characteristic of PCOS. MK, a heparin-binding growth factor/cytokine, promotes growth, survival, migration and gene expression of various target cells and play roles in many diseases. In normal adult tissues, MK expression is highly restricted. MK has a mitogenic effect on primordial germ cells and retinoid acid promotes cytoplasmic maturation of oocytes through MK promoter in vivo models. The role of MK in infertility is still understudied.

Study design, size, duration: A prospective study of 220 women suffered from PCOS who were scheduled for intracytoplasmic sperm injection (ICSI) at hospital infertility clinic during 2011-2016.

Participants/materials, setting, methods: This study included 130 PCOS patients and 90 proven fertile women aged 24-41 years. Serum levels of follicle stimulating hormone (FSH) and luteinizing hormone (LH) with the radioimmunoassay, estradiol 2 (E2), prolactin (PRL) with the immunoradiometric test, AMH and MK levels with the enzyme-linked immunosorbent assay (ELISA) on cycle day 3 and body mass index (BMI), MI oocyte and fertilisation rates were all evaluated using ANOVA test and p<0.05 was considered statistically significant.

Main results and the role of change: Mean values of hormone and MK levels for the control group (fertile women) were FSH 5.7 mIU/ml, LH 3.2 mIU/ml, E2 31.9 pg/ml, PRL 15.67 ng/ml, AMH3 3 ng/ml and MK 250 pg/ml. For the PCOS group, these were FSH 6.1 mIU/ml (p<0.05), LH 5.6 mIU/ml (p<0.0001), E2 41.9 pg/ml (p<0.05), PRL 15.44 pg/ml (p<0.05), AMH 5.83 ng/ml (p<0.0001) and MK 420 pg/ml (p<0.00001). These data can be summarized as follows that LH, E2, AMH and MK levels were increased at the PCOS group, but FSH and PRL levels were found decreased. Consequently, the serum MK cut-off value was determined as 420 pg/ml for PCOS. BMI was similar between groups as 26.8 kg/m² and 27.3 kg/m² for the control group and the PCOS group, respectively (p>0.05). MI oocyte rate was lower at the PCOS group (45 %) than at the control group (74 %) (p<0.00001). The lowest fertilisation rate was determined at the PCOS group as 50 %, where it was 93 % at the control group (p<0.00001).

Limitations, reasons for caution: Only patients enrolled for ICSI were included in this study and the number of the study participants was also low. These may limit the generalizability of these findings.