

## THE LEVELS OF SOME HORMONES IN POLYCYSTIC OVARIAN SYNDROME

Victoria VOLOCEAI, Valentin FRIPTU

Nicolae Testemitanu State University of Medicine and Pharmacy, Republic of Moldova

Corresponding author: Victoria Voloceai, e-mail: victoria.voloceai@usmf.md

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**Introduction.** The diagnosis of polycystic ovary syndrome (PCOS) involves not only clinical signs that are characteristic for this pathology but also lots of hormonal tests used in order to identify ovarian pathogenesis. Evaluation can be done by testing follicle stimulating hormone (FSH), luteinizing hormone (LH), testosterone (T), prolactin (P), thyroid-stimulating hormone (TSH), 17-hydroxyprogesteron and inhibin B level and in last 5 years – anti-Mullerian hormone (AMH) level. At the moment AMH is proposed as a hormonal test which appreciates female endocrine infertility and is considered a gold standard of diagnosis of PCOS. The blood level of AMH is not affected by menstrual cycle or by oral contraceptives use (OC), making it a useful criterion for diagnosing PCOS. The diagnosis of PCOS involves not only clinical signs that are characteristic for this pathology but also lots of hormonal tests used in order to identify ovarian pathogenesis including testing for FSH, LH, T, P, TSH, 17-hydroxyprogesteron and inhibin B level and in the last 5 years, AMH level. In recent years, AMH has emerged as a gold standard hormonal test for diagnosing PCOS and evaluating female endocrine infertility. The hormonal levels of AMH in the blood samples are very informative in women with PCOS and who are undergoing laparoscopic ovarian drilling (LOD) and also for those who are undergoing (in vitro fertilization (IVF). The blood level of AMH is not affected by the menstrual cycle and is not changing during OC administration, which is a criterion of PCOS diagnosis.

**The aim of study.** To appreciate the correlation between AMH and USG criteria and other hormones implicated in SOP pathogenesis.

**Material and methods.** All 138 patients included in the study met the Rotterdam criteria of SOP diagnose and were treated with LOD, being examined the hormonal levels of FSH, LH, T, estradiol (E2), P, dehydroepiandrosterone sulphate (DHEAS) on the third day of menstrual cycle, not only to confirm the diagnosis of PCOS, but also to appreciate its severity. After LOD all the patients were again hormonally tested in order to establish the impact of surgical treatment on hormonal status, and to assess any, correlation between different hormones.

**Results.** The analysis of the obtained data showed that there is a strong correlation between AMH and the hormones that are defining PCOS. Our research established that AMH correlates statistically with the level of LH, so if the AMH levels are higher the LH levels will be less than 10 UI/L ( $r=0.6922$ ), which allows us to predict patients that wouldn't answer to LOD. The research demonstrated that AMH value has an important pre-operative value in PCOS patients, representing a crucial criterion in selecting the best method of endoscopic treatment (LOD or laparoscopic ovarian wedge resection). Furthermore, its value plays an important role in the outcome of the surgical treatment. The study confirms a strong direct correlation between AMH/LH and between AMH and severe biochemical hyperandrogenism ( $p<0.001$ ). Additionally, a strong indirect correlation was observed between AMH and FSH ( $p<0.001$ ).

**Conclusions.** The study established a strong direct correlation between AMH and LH, T, as well as a strong indirect correlation between AMH and FSH, which allows us to appreciate the phenotype of PCOS patients and to select the method of surgical treatment.