Value of the chemiluminescence Elecsys antimullerian hormone assay for the assessment of the ovarian follicle pool: preliminary study at the IASO- IVF unit- FMF WORLD CONGRESS, CRETE 2015

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Introduction-Objectives.

Prediction of response to ovarian stimulation and outcome in assisted reproduction is a central aspect in clinical practice. Although several biomarkers have been investigated over the years two of them have shown markedly greater accuracy and are currently in use: antral follicle count (AFC) and antimullerian hormone (AMH) [1]. Serum AMH reflects also the number of small antral follicles and is predictive of ovarian response [1, 2, 3]. Although currently available tests have been proven helpful in diagnosis, there have been identified issues of lack of standardization among those produced by different manufacturers and concerns about data reliability [4]. Among new automated platform-based AMH essays [5] we designed to investigate the value of AMH measurement using the novel Elecsys AMH assay in the assessment of ovarian reserve as expressed by AFC.

Table 1. Agreement for antral follicle counts (AFC) groups and new antimullerian hormone AMH groups ***(values in ng/mL)***

AMH groups	1st group AFC<5	2nd group AFC 5-7	3rd group AFC 8-15	N
1st AMH<0.5	23	1		24
2nd 0.5<AMH <1.1	1	9	1	11
3rd AMH>1.1		2	8	10

Subjects and methods: The study includes 49 women aged 29 to 48 years old with regular menstrual cycle recruited at IASO IVF unit. AFC counts have been measured according to ESHRE guidelines [6]. AMH was determined on an Elecsys Roche System, a sandwich immunoassay based on electrochemiluminescence (ECLIA) technology. Blood serum was separated by centrifugation at 3.500 g and duplicated samples proceeded directly to testing. A two level control sample of 0.93 and 4.8 ng/ml in each run was used. The sample volume is 50ul and the total duration of the assay is 18 min. The LoQ is 0.03 ng /ml.

Results The primary aim of this study was to evaluate AMH determined by the ROCHE Elecsys system as a biomarker of ovarian reserve compared to AFC. AMH test results were ranging between < 0.01 ng/ml and 6.85 ng/ml. Results are summarized in table 1.

Discussion We report here a preliminary study on the assessment of ovarian reserve by using the new AMH test from ROCHE. AMH test results versus AFC have been shown in agreement overall in 91,1% according to ESHRE criteria From nine group 3 AFC patients one belonged to 0.5<AMH <1.1 group and 4 have shown polycystic ovary syndrome (PCOS). The test was evaluated against commercially available ELISA AMH test (data not shown) and an agreement was shown in 95% of the cases. Our results are in agreement with recently reported research [7], although in a restricted number of patients. The new automated Elecsys assay shows good correlation with AFC providing an efficient tool for the measurement of the growing follicle pool.

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