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P46. Clinical application of the automated AMH assay for diagnosing PCOS in Indian women

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Context: Polycystic ovary syndrome (PCOS) diagnosed by Rotterdam's criteria, is the most common cause of anovulatory infertility. Replacement of AFC (on ultrasound) by serum AMH in the Rotterdam criteria has been proposed. A cut-off value of 4.7-5ng/ml in Caucasian and 10ng/ml in Japanese women has been suggested. We aimed to study the cut-off value for AMH for diagnosis of PCOS in Indian women using the more precise and reproducible automated assay.

Objective: To determine if use of automated serum AMH assay could facilitate diagnosis of PCOS and its phenotypes in women of Indian origin.

Patients: 367 women undergoing infertility treatment at our center were recruited between February-August 2017. Of these, 133 were diagnosed with PCOS, 69 had isolated PCOM and 165 had normal ovaries on ultrasound examination (controls). PCOS patients were further divided into 4 phenotypes according to the NIH 2012 extension of Rotterdams criteria.

Methods: Serum AMH was assessed in the early follicular phase using the fully automated Elecsys® AMH assay. AMH characteristics in terms of optimal cut-off and area under the ROC for diagnosing PCOS were estimated. Variations of AMH levels in different phenotypes of PCOS were also assessed.

Intervention(s):nil

Main outcome Measure: AMH cut-off for diagnosing PCOS

Results: There were significant differences in the mean serum AMH concentrations in women with PCOS, 7.56 ± 4.36 ng/mL in comparison to PCOM, 6.1 ± 3.78 ng/mL and controls 2.25 ± 1.81 ng/mL (P <0.001). The mean AMH levels in women with PCOS (phenotype A) 9.05 ± 5 ng/mL was significantly higher than the other phenotypes (P <0.05). The mean AMH levels in phenotype B 3.32 ± 2.03ng/mL, was significantly lower than the other phenotypes. There was no significant difference in the serum AMH levels between Phenotype C 6.31 ± 2.59 ng/mL and D 6.39 ± 3.67 ng/mL (P >0.05). Serum AMH concentration greater than 5.03 ng/mL could facilitate discrimination of women with PCOS from women with PCOM and normal ovaries with a sensitivity of 70.68% and specificity of 79.91% (AUC =0.826). The rate of decline of AMH with age was significantly lesser in women with PCOD and PCOM than the controls.

Conclusion: The study suggests that the severity of symptoms of PCOS is positively related to the serum AMH levels. A serum AMH concentration > 5.03 ng/mL may help facilitate diagnosis of PCOS in women of Indian origin.

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