

Clinical utility of Serum Anti-Mullerian hormone(AMH) in Polycystic Ovarian Syndrome (PCOS) Women



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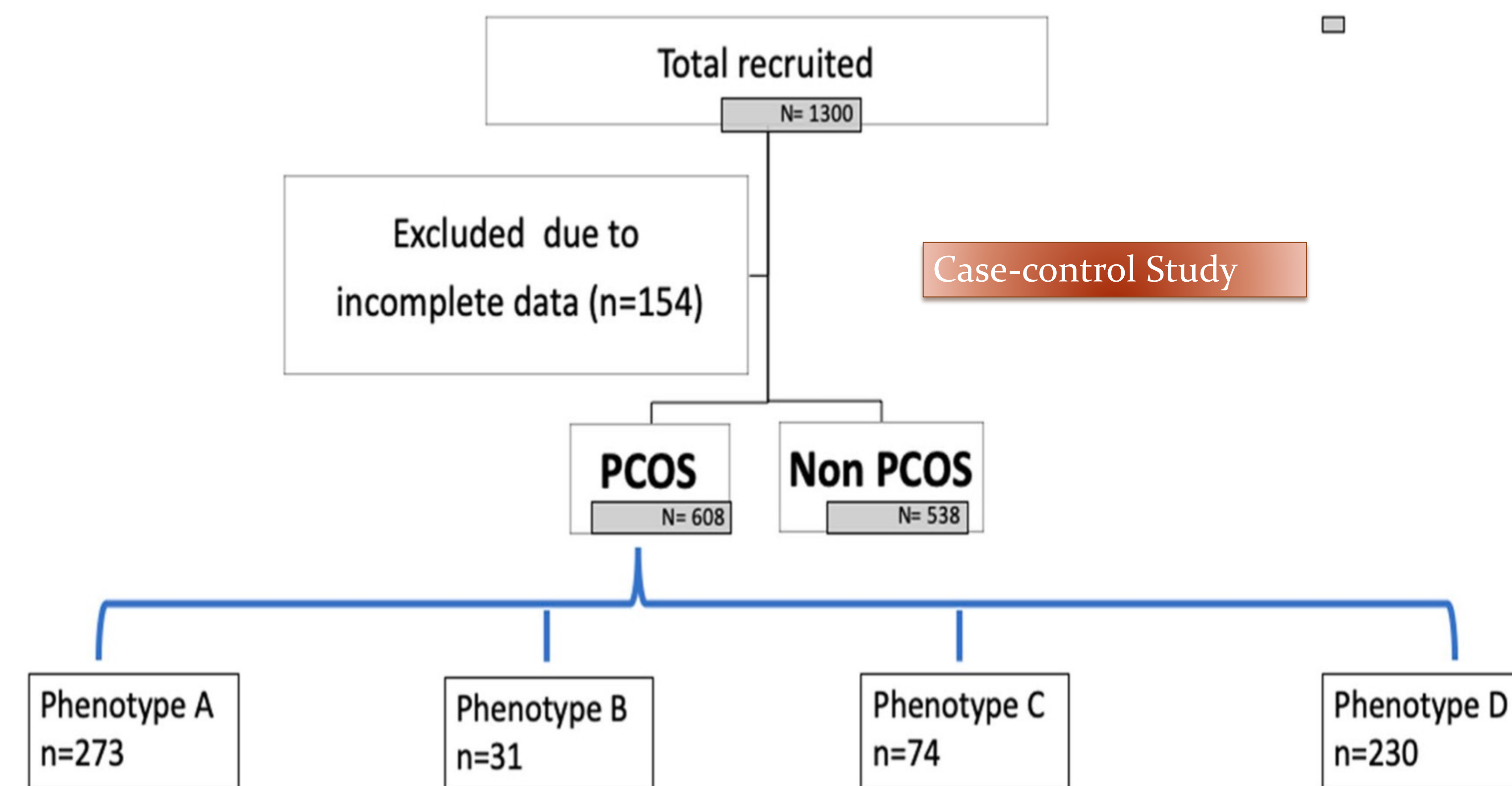
INTRODUCTION

- Polycystic ovarian syndrome (PCOS); a multisystem endocrine disorder is the most common cause of anovulatory infertility with a prevalence of 6–20% among women of reproductive age.
- Four clinical phenotypes have been defined: **Phenotype A**- anovulation (OA), hyperandrogenism (HA), and polycystic ovarian morphology (PCOM) (OA+HA+PCOM); **Phenotype B**- anovulation and hyperandrogenism (HA+OA); **Phenotype C**- hyperandrogenism and polycystic ovarian morphology (HA+PCOM); and **Phenotype D**- anovulation and ovarian morphology (OA+PCOM).
- Despite this classification, definition of each individual parameter is still controversial.
- AMH is still not included in the guideline as a diagnostic criterion for PCOS despite enormous literature in various ethnicities.
- Unanswered questions include AMH cutoff to diagnose PCOS, its exact correlation with follicular pool and its correlation with other clinical, endocrinological, and metabolic parameters of PCOS.
- The present study was planned to evaluate serum AMH levels among different PCOS phenotypes and its correlation with clinical, endocrinological, and metabolic parameters among PCOS Indian women.

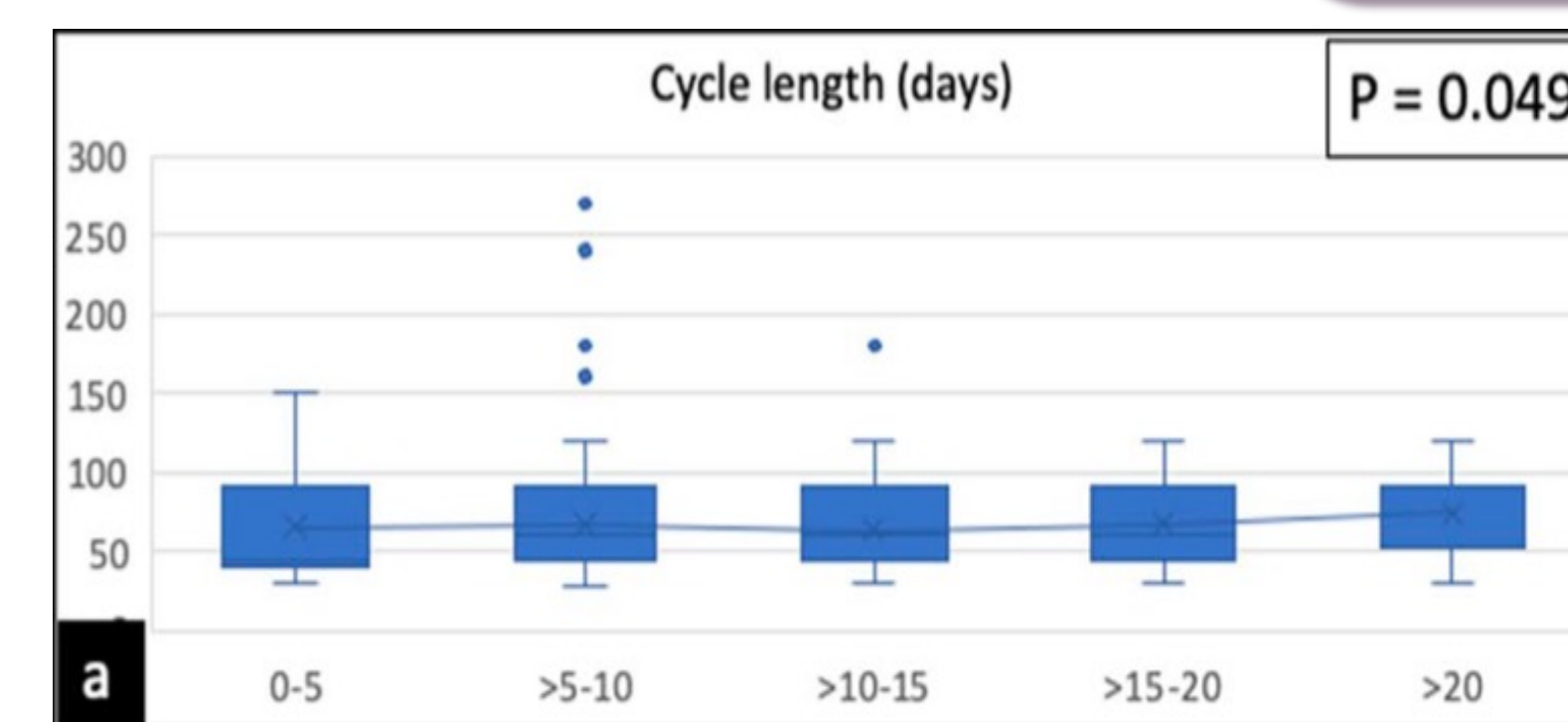
OBJECTIVES

- Correlation of various serum AMH levels with clinical parameters (cycle length and AFC count), endocrinological (LH/FSH ratio, serum testosterone) and metabolic parameters among Indian PCOS women.
- Derivation of serum AMH cut-off value for diagnosing PCOS among Indian women.

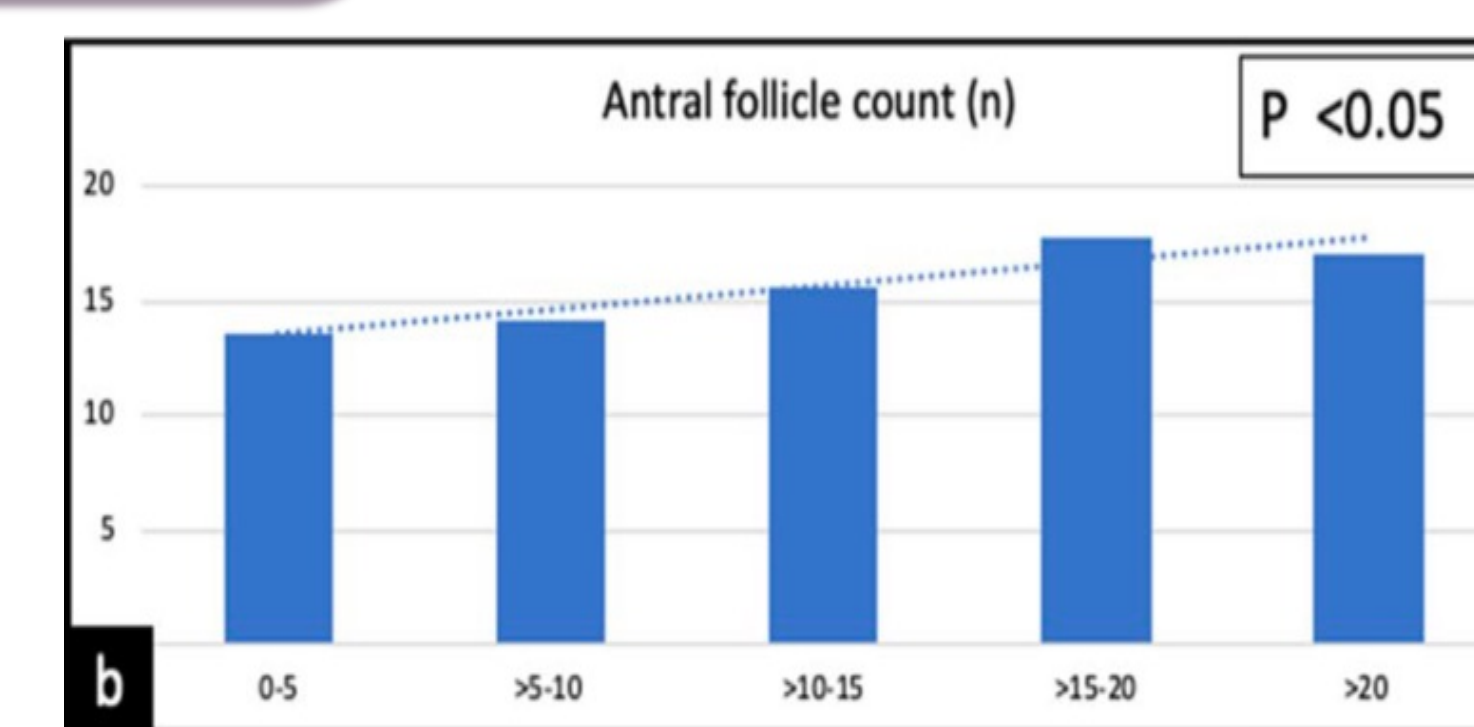
CONSORT DIAGRAM



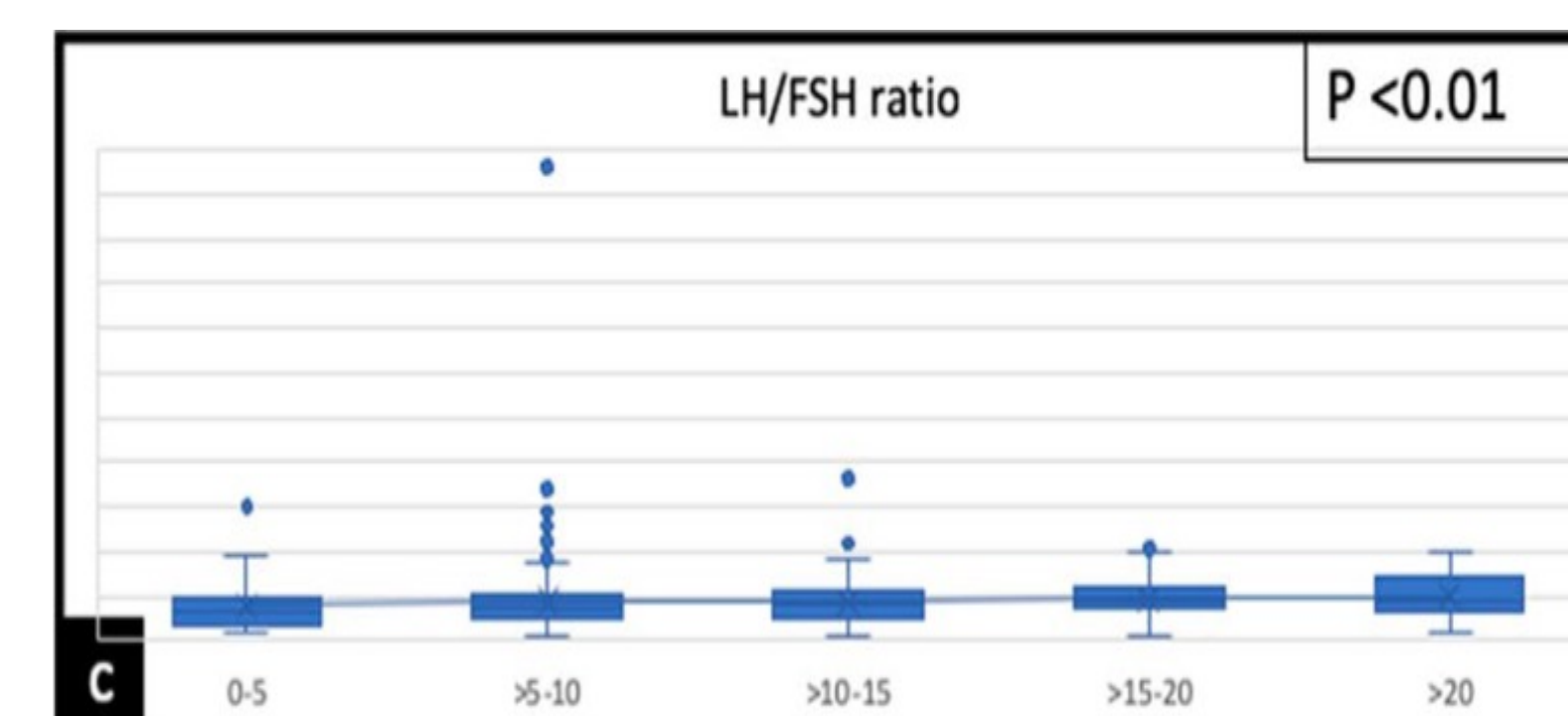
RESULTS



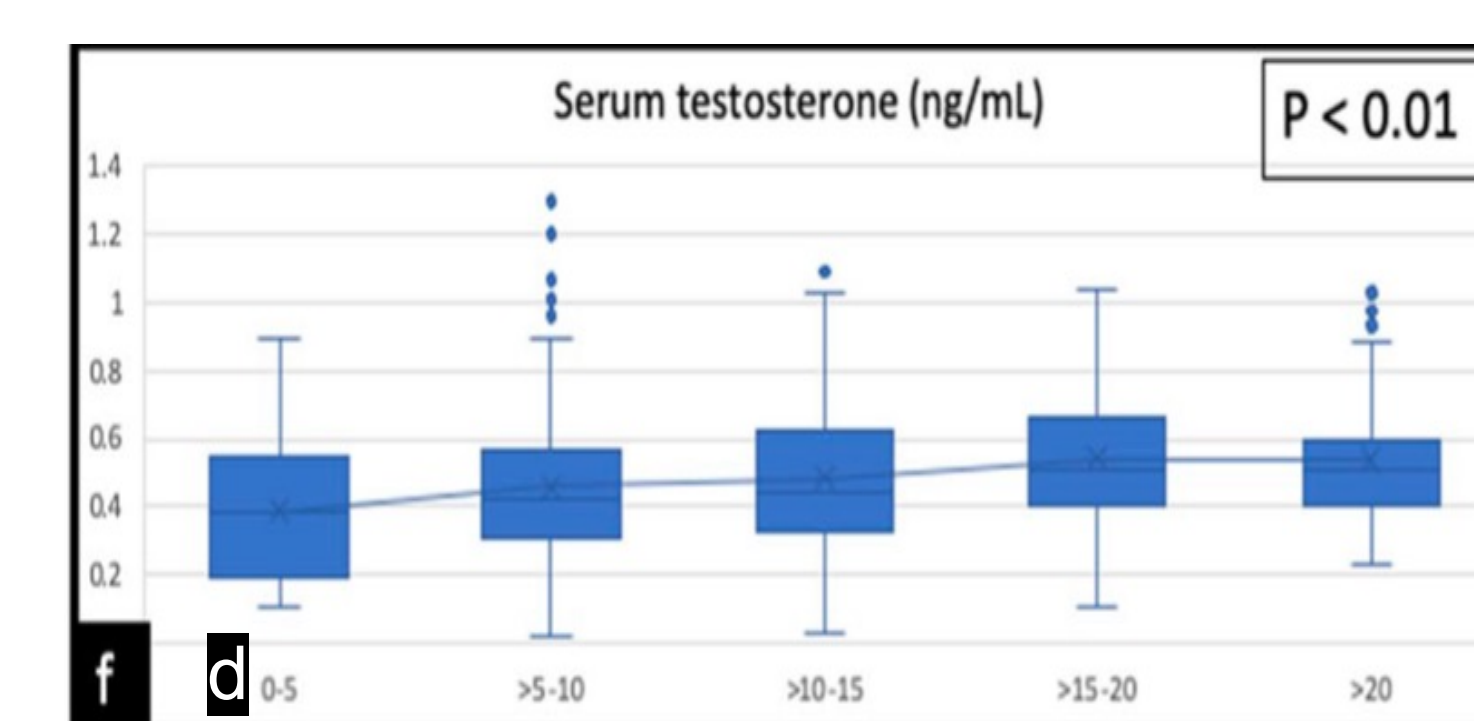
Correlation of AMH levels with cycle length



Correlation of AMH levels with AFC

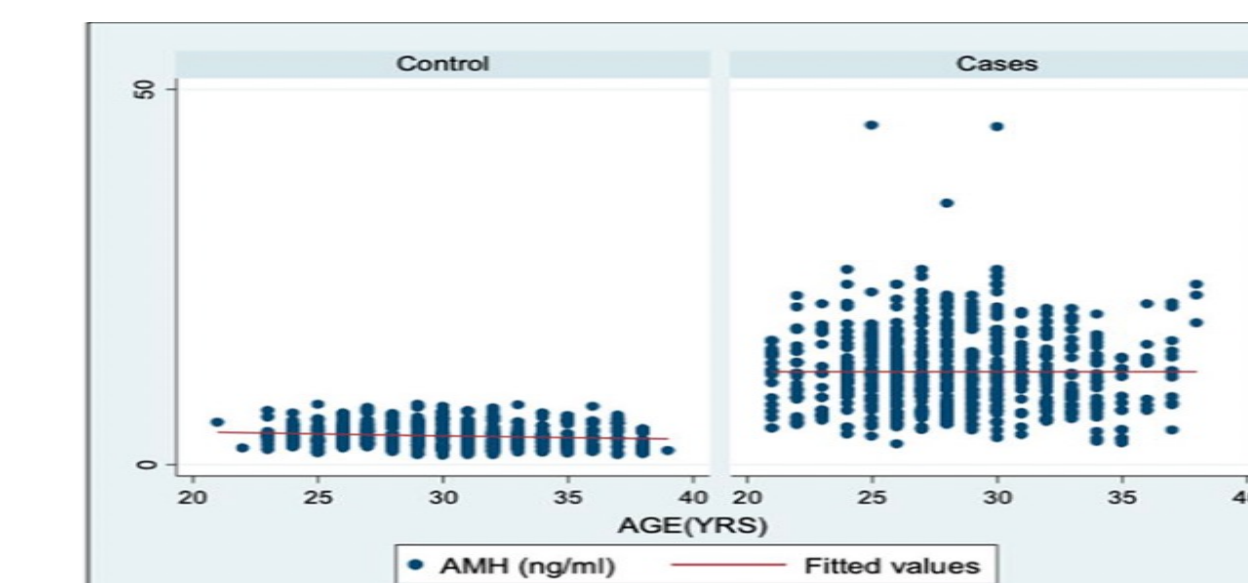


Correlation of AMH levels with LH/FSH ratio

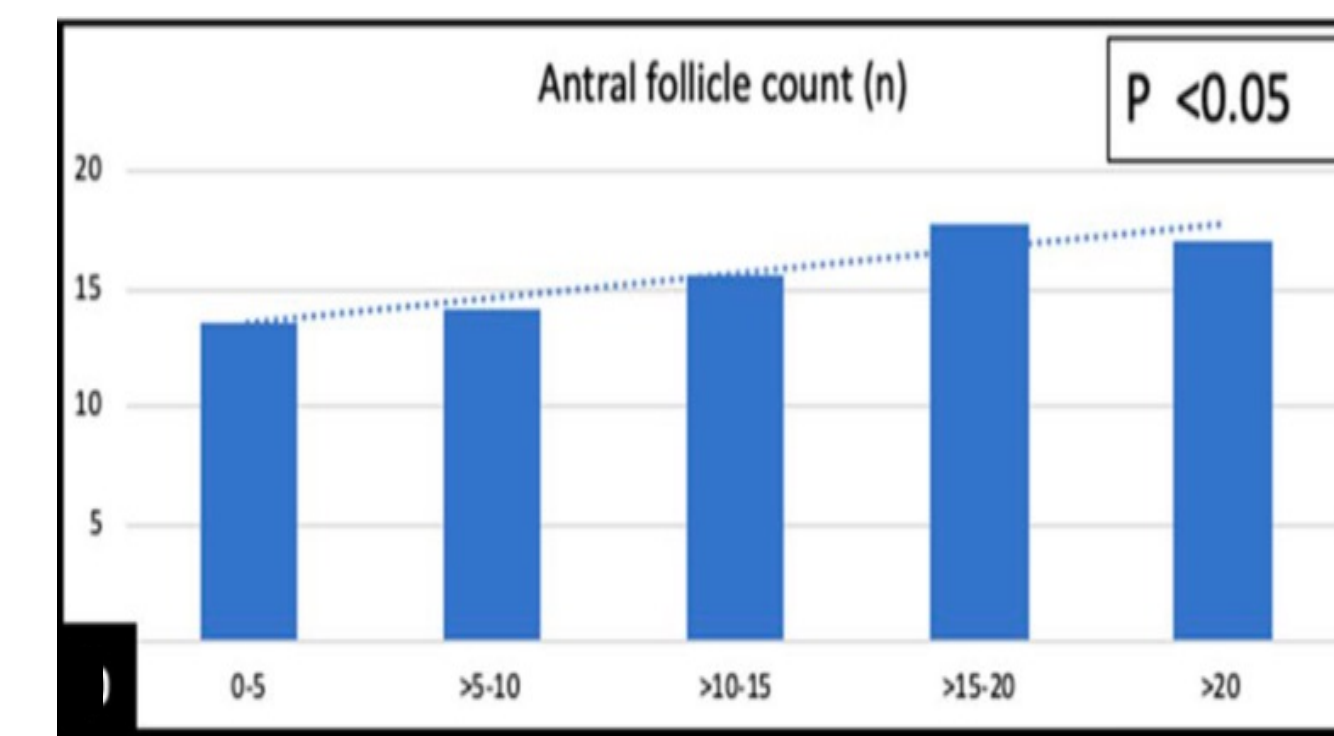


Correlation of AMH levels with serum testosterone

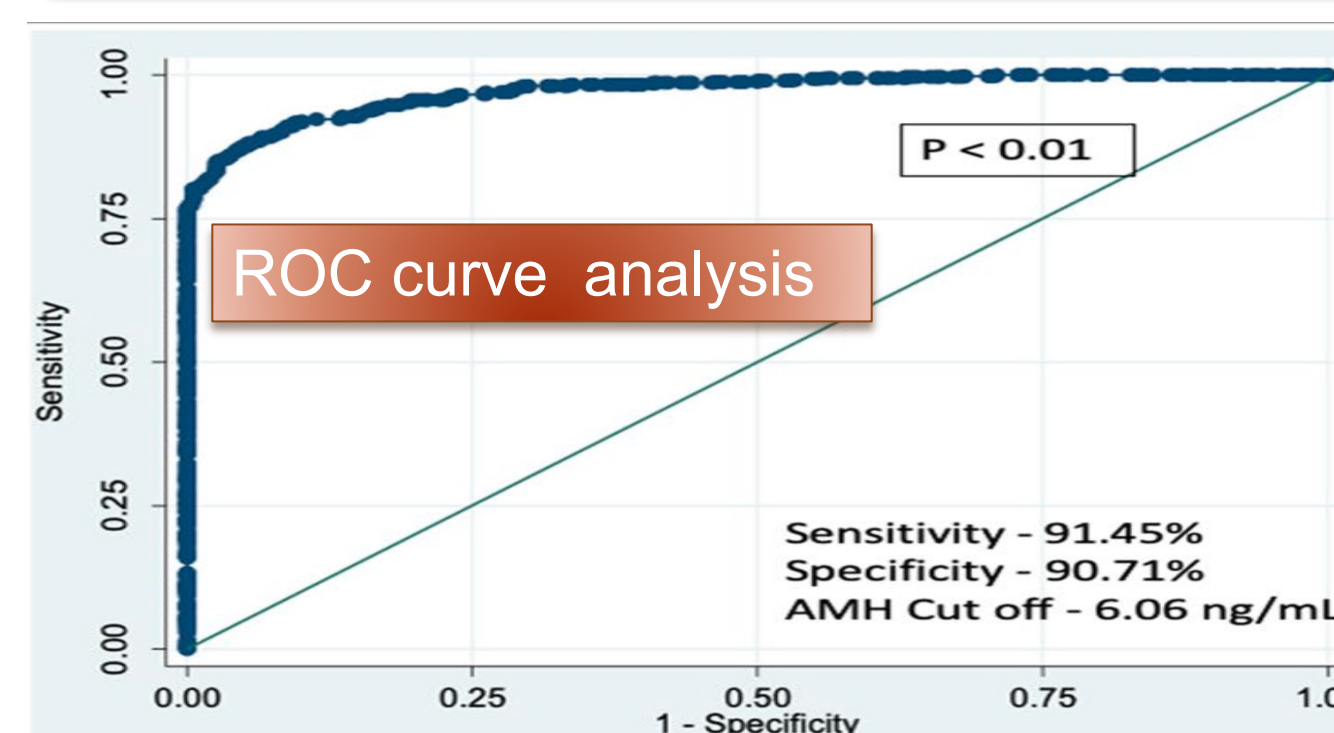
- Mean serum AMH was 12.39 ± 5.3 ng/mL in PCOS cohort and 3.83 ± 1.5 ng/mL in non-PCOS cohort ($P < 0.01$).
- Out of 608 PCOS women, 273 (44.9%) women belonged to phenotype A, 230 (37.8%) women were phenotype D. Phenotypes C and B were 12.17% and 5.10% respectively.
- Menstrual cycle length, serum testosterone, fasting total cholesterol levels, and AFC had positive correlation with serum anti-Mullerian levels ($P < 0.05$).



Box-Whisker plot with AMH ranges among PCOS phenotypes & controls



Distribution of AMH level age-wise



CONCLUSION

- Ethnic differences have been reported among PCOS women from different backgrounds.
- AMH as a diagnostic marker for PCOM has several limitations like heterogeneity in the methods used for estimation and different age groups.
- Present study showed serum AMH level of more than 6.06 ng/mL using ultrasensitive two-site ELISA (Ansh labs, USA) diagnoses PCOS with high sensitivity and specificity.
- High serum AMH levels in PCOS are associated with worse clinical, endocrinological and metabolic parameters.
- High levels may be used to prognosticate patients regarding treatment response, help in individualized management and prediction of reproductive and long-term metabolic outcomes.

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