

## Variation in Anti-Mullerian Hormone Levels with Age in Women Accessing In Vitro Fertilization Services in Ghana

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### Abstract

**Background:** The emergence of AMH as a reliable biomarker for assessing ovarian reserve and optimization of assisted reproductive technology (ART) remains a promising tool for the evaluation and prediction of controlled ovarian stimulation (COS) outcomes. This study assessed the association between serum AMH levels and maternal age in females receiving in vitro fertilization (IVF) treatment in Ghana. **Methods:** We conducted a prospective cohort study at a specialized fertility center in Ghana. Descriptive analysis was performed, and the differences between maternal age and AMH categories were assessed by the Kruskal–Wallis test. **Results:** We included 426 women with mean ( $\pm$ SD) age and AMH levels of  $35.25 \pm 6.33$  years and  $2.80 \pm 2.60$  ng/mL, respectively. Women with very-low AMH levels ( $0.94 \pm 73$  ng/mL) were older ( $>40$  years), whereas the younger (20–25 years) group had higher levels ( $4.85 \pm 3.34$  ng/mL). There was a significant negative correlation between women's age and serum AMH levels ( $R = -0.46$ ;  $p < 0.001$ ). None of the younger women had AMH levels  $<0.30$  ng/mL, while 70% of women who had AMH levels of  $<0.30$  ng/mL were older women ( $>40$  years). In addition, none of the older women had AMH levels  $>4$  ng/mL with only 5% having AMH levels between 2.20 and 4.0 ng/mL. **Conclusions:** AMH levels  $\leq 0.3$  ng/mL are archetypal of 70% of Ghanaian women  $>40$  years old receiving fertility treatment. A combined assessment of AMH levels and age supports clinical decisions in predicting ovarian response to controlled ovarian stimulation (COS) and may be valuable in predicting of IVF success. Further research to evaluate the combined use of age, AMH, and other ovarian reserve markers in assessing ovarian response to COS is recommended. **Keywords:** anti-Mullerian hormone (AMH); Ghanaian women; controlled ovarian stimulation; IVF; ovarian response

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### Biography

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