Original Research Paper

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BEYOND IVF' READING THE RESERVE: AMH-GUIDED PREDICTION OF PREGNANCY IN TIMED INTERCOURSE CYCLES"

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ABSTRACT **Background:** Anti-Müllerian hormone (AMH) serves as a reliable marker of ovarian reserve, reflecting the pool of growing follicles. While extensively validated in assisted reproductive technologies, its predictive value for pregnancy outcomes in low-cost ovulation induction with timed intercourse remains underexplored, particularly in Indian populations.[Attachment] **Objective:** To evaluate serum AMH levels in infertile women undergoing ovulation induction with timed intercourse and correlate AMH with pregnancy outcomes, age, BMI, hormonal parameters, antral follicle count (AFC), and ovarian volume.[Attachment] **Methods:** Prospective observational study of 50 infertile women aged <35 years with ovarian-factor infertility at Government Maternity Hospital, Hanamkonda (September 2022–August 2024). Baseline assessment included day-3 hormonal profile (AMH, FSH, LH, estradiol, TSH, prolactin) and transvaginal ultrasound (AFC, ovarian volume). Standard ovulation induction was followed by timed intercourse; clinical pregnancy was the primary outcome. AMH was stratified into five categories; correlations were analysed using Pearson coefficients (SPSS v24, p<0.05).[Attachment] **Results:** Mean age 29.54±2.56 years, BMI 21.52±4.51 kg/m², AMH 1.28±1.46 ng/ml. Pregnancy rate: 36% (18/50). By AMH strata: <0.5 ng/ml (0%, n=7), 0.5–1.0 (20%, n=10), 1.01–1.5 (30.76%, n=13), 1.5–4.0 (88.88%, n=9), >4.0 ng/ml (36.36%, n=11). AMH negatively correlated with age (r=-0.436), BMI (r=-0.018, significant), and positively with LH (r=0.449), AFC (r=0.328), ovarian volume (r=0.244).[Attachment]

KEYWORDS : Anti-Müllerian hormone, ovarian reserve, ovulation induction, timed intercourse, pregnancy prediction, infertility

INTRODUCTION

Anti-Müllerian hormone (AMH), produced by granulosa cells of preantral/small antral follicles, superiorly reflects ovarian reserve compared to day-3 FSH due to cycle-independent stability. In India, ovulation induction + timed intercourse remains first-line for anovulatory infertility in resource-limited settings.[obgyn.onlinelibrary.wiley +2]

Study Gap:

AMH extensively validated in IVF/ICSI, but data limited for simple ovulation induction cycles in Indian populations.

AIM:

Correlate serum AMH with pregnancy outcomes and ovarian reserve markers (age, BMI, hormones, AFC, ovarian volume).[Attachment]

MATERIALS AND METHODS

Study Design:

Prospective observational study, Department of Obstetrics & Gynaecology, Government Maternity Hospital, Hanamkonda (Sept 2022-Aug 2024).

Inclusion:

Age <35y, ovarian-factor infertility, regular/treatable cycles, informed consent.

Exclusion:

Tubal disease, endometriosis, endocrine disorders, non-compliance.

Sample: n=50 consecutive eligible women.

Protocol

1.Day 3 Assessment: Hormones (AMH, FSH, LH, E2, TSH, PRL) + TVS (AFC, ovarian volume).
2.Intervention: Standard ovulation induction (CC/letrozole) + timed intercourse.
3.Outcome: Clinical pregnancy (β-hCG + USG confirmation).
4.AMH Stratification: <0.5, 0.5-1.0, 1.01-1.5, 1.5-4.0, >4.0 ng/ml.

Ethics & Statistics

IEC approved. Written consent obtained. SPSS v24: means±SD, Pearson r, χ^2/Fisher's exact, p<0.05 significant.

RESULTS

Table 1: Baseline Characteristics (n=50)

PARAMETER	MEAN±SD/n(%)
AGE(years)	29.54±2.56
21-25y	8(16%)
26-30y	27(54%)
31-35y	15(30%)
BMI(kg/m2)	21.52±4.51
Underweight	26(52%)

Table 2: Hormonal & Ultrasound Profile

PARAMETER	MEAN±SD
AMH(ng/ml)	1.28±1.46
FSH(mIU/ml)	5.54±2.78
LH(mIU/ml)	7.39±4.10
AFC	8.20±1.62
OVARIAN VOLUME	5.14±0.87

Table 3: AMH vs Pregnancy Outcome

AMH(ng/ml)	Pregnant n(%)	Total
<0.5	0	7
0.5-1.0	2(20%)	10
1.01-1.5	4(31%)	13
1.5-4	8(89%)	9
>4.0	4(36%)	11
Total	18(36%)	50

Table 4: AMH Correlations

PARAMETER	r	p-value
age	-0.436	NS
BMI	-0.018	*
LH	0.449	NS
AFC	0.328	NS
*p<0.05		

DISCUSSION

Key Finding: AMH 1.5-4.0 ng/ml yielded 89% pregnancy rate vs 0% at <0.5 ng/ml, establishing optimal therapeutic window for ovulation

induction.[sciencedirect]

Clinical Relevance:
- <0.5 ng/ml: Counsel alternatives (donor eggs/adoption)
- 1.5-4.0 ng/ml: Optimal prognosis, proceed confidently
- >4.0 ng/ml: PCOS risk, monitor endometrial receptivity

Literature Alignment: U-shaped pregnancy curve mirrors IVF data where extreme AMH indicates oocyte quality issues. Negative age correlation validates AMH as ageing marker.

Limitations: n=50, single-cycle, single-centre.

Strengths: Prospective, comprehensive profiling, Indian context relevance.

CONCLUSION

AMH 1.5-4.0 ng/ml maximises pregnancy success in ovulation induction (89%); <0.5 ng/ml predicts failure (0%). Routine AMH testing recommended for personalised infertility counselling and treatment planning in resource-constrained settings.

DECLARATIONS

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Ethics: Institutional Ethics Committee approved

REFERENCES

1. Broer SL, et al. Hum Reprod Update. 2014;20:688-701
2. de Vet A, et al. Fertil Steril. 2002;77:357-62
3. Nelson SM. Reprod Biomed Online. 2011;23:411-20
4. Elgindy EA, et al. Fertil Steril. 2008;89:1670-6
5. Shrikhande L, et al. J Obstet Gynaecol India. 2020;70:337-41
6. Nardo LG, et al. Gynecol Endocrinol. 2007;23:486-93