

Low Anti-Mullerian Hormone in Primary Infertility: A Review with Homoeopathic Therapeutic Approach

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ABSTRACT

Introduction: Primary infertility is a significant reproductive health problem. Anti-Mullerian Hormone (AMH) is an important marker of ovarian reserve, and reduced levels may indicate diminished ovarian reserve (DOR). However, low AMH alone does not establish infertility or predict absolute inability to conceive.

Methods: This narrative review examines the physiology and clinical significance of low AMH in primary infertility, with emphasis on diagnostic evaluation, conventional management and the potential role of individualized homoeopathic therapeutics. Relevant literature, clinical guidelines and homoeopathic repertorial sources were reviewed.

Investigations: Evaluation includes detailed reproductive history, assessment of ovulation, serum AMH with other indicated hormonal investigations, transvaginal ultrasonography with antral follicle count, assessment of uterine and tubal factors, and simultaneous semen analysis of the male partner.

Conventional Management: Management depends on the underlying cause, age and ovarian reserve and may include lifestyle optimization, treatment of identifiable causes, ovulation induction, intrauterine insemination (IUI), or assisted reproductive techniques such as in-vitro fertilization (IVF/ICSI), when clinically indicated.

Discussion: Low AMH is useful for assessing ovarian reserve and anticipating ovarian response to stimulation but has limited value as an independent predictor of fertility. Homoeopathy emphasizes individualized treatment based on the totality of symptoms; however, evidence regarding its effectiveness in improving AMH, ovarian reserve and fertility outcomes remains limited.

Conclusion: Low AMH should be interpreted as one component of a comprehensive infertility evaluation. Timely diagnosis and individualized conventional fertility management are essential. Homoeopathy may be considered as a complementary approach, while further well-designed clinical studies are required to establish its efficacy in infertility associated with diminished ovarian reserve.

KEYWORDS: Low Anti-Mullerian Hormone, Primary infertility, ovarian reserve, Diminished ovarian reserve, Female infertility, Homoeopathy, Individualized homoeopathic treatment, Constitutional remedy, Reproductive health.

1. INTRODUCTION

Infertility is defined as the inability to conceive after one year of regular unprotected intercourse. It affects approximately 10–15% of couples of reproductive age worldwide. Primary infertility refers to a condition where a woman has never conceived^[1] Among various diagnostic tools used to evaluate

female fertility, Anti-Mullerian Hormone (AMH) has emerged as an important marker of ovarian reserve. AMH reflects the number of growing follicles present in the ovaries. Low AMH levels indicate diminished ovarian reserve, although AMH alone should not be considered a direct test of fertility^[2,3] In recent years, many women with low AMH have sought alternative or complementary approaches such as homoeopathy for improving fertility potential. Homoeopathy emphasizes individualized treatment based on the totality of symptoms and constitutional characteristics of the patient.

2. PHYSIOLOGY OF ANTI-MULLERIAN HORMONE

Anti-Mullerian Hormone is produced by granulosa cells of small ovarian follicles. It plays a role in regulating follicular development by inhibiting excessive recruitment of primordial follicles.^[3,4]

Key characteristics of AMH include:

- Produced in pre-antral and small antral follicles
- Reflects ovarian follicular reserve
- Relatively stable throughout the menstrual cycle
- Useful in predicting ovarian response to stimulation

3. NORMAL AMH LEVELS (APPROXIMATE)

- High ovarian reserve: >3.0 ng/mL
- Normal ovarian reserve: 1.5–3.0 ng/mL
- Low ovarian reserve: <1.5 ng/mL
- Severely diminished reserve: <0.5 ng/mL

Low AMH levels suggest reduced follicular pool but do not necessarily indicate absolute infertility^[2,5]

4. CAUSES OF LOW AMH

Several physiological and pathological factors may contribute to reduced AMH levels:

1. Increasing maternal age
2. Genetic factors
3. Premature ovarian insufficiency
4. Ovarian surgery or damage to ovarian tissue
5. Chemotherapy or radiation therapy
6. Autoimmune disorders
7. Lifestyle factors such as smoking and obesity

These factors may lead to decreased ovarian follicle number and impaired fertility potential.

5. CLINICAL FEATURES

Women with low AMH may present with the following features:

- Difficulty in conceiving
- Irregular menstrual cycles
- Shortened menstrual cycle length
- Reduced ovarian follicle count on ultrasound
- History of ovarian surgery or premature menopause in family

However, many women with low AMH may still have regular menstrual cycles and normal ovulation^[2,3]

6. DIAGNOSIS

Evaluation of primary infertility with low AMH should include assessment of both partners. Important investigations include:

- Serum AMH: assessment of ovarian reserve.
- Hormonal profile: FSH, LH, estradiol and thyroid function tests; additional tests when clinically indicated.
- Transvaginal ultrasonography: assessment of antral follicle count, ovaries, uterus and pelvic abnormalities.
- Ovulation assessment: based on menstrual history and, when required, progesterone, urinary LH or follicular monitoring.
- Tubal assessment: HSG or other appropriate methods to determine tubal patency.
- Uterine assessment: ultrasound with further evaluation when structural abnormalities are suspected.
- Male partner: semen analysis as an essential component of infertility evaluation.
- AMH should be interpreted together with age, menstrual/ovulatory status, antral follicle count and other clinical findings rather than as an isolated diagnostic test.

7. CONVENTIONAL MANAGEMENT

After diagnosis, management of primary infertility is individualized according to age, ovarian reserve, duration and cause of infertility, and findings in both partners. Management may include:

- Lifestyle and preconception optimization.
- Treatment of identifiable causes such as ovulatory, tubal, uterine or male-factor abnormalities.
- Ovulation induction in appropriate anovulatory cases.
- Intrauterine insemination (IUI).
- In-vitro fertilization (IVF) indicated, particularly when other treatments are unsuccessful or specific female/male factors are present.

In women with diminished ovarian reserve, AMH and antral follicle count assist in counselling and predicting ovarian response to stimulation, but they should not be considered absolute predictors of pregnancy or live birth,

HOMOEOPATHIC CONCEPT OF INFERTILITY

Homoeopathy views infertility as a manifestation of deeper constitutional imbalance affecting the reproductive system. According to the principles described in the Organon of Medicine by Samuel Hahnemann, treatment should be directed toward restoring the balance of the vital force^[6]. Homoeopathic management focuses on:

- Individualized remedy selection
- Constitutional treatment
- Addressing mental and emotional factors
- Improving overall health and hormonal balance

The aim is to stimulate the body's self-regulatory mechanisms and improve reproductive capacity.

HOMOEOPATHIC THERAPEUTICS

Several homoeopathic medicines are frequently indicated in women suffering from infertility associated with hormonal imbalance and diminished ovarian function.

Sepia officinalis

- Bearing-down sensation in pelvis
- Irregular or scanty menses
- Hormonal imbalance with fatigue
- Aversion to family or emotional indifference

Pulsatilla nigricans

- Delayed or irregular menstruation
- Hormonal disturbances
- Mild, emotional, and changeable temperament

Natrum muriaticum

- Infertility with emotional grief or suppressed emotions
- Irregular menstrual cycles
- Headache associated with menses

Calcarea carbonica

- Delayed ovulation
- Obesity and hormonal imbalance
- Profuse menstruation with weakness

Lycopodium clavatum

- Right-sided ovarian complaints
- Digestive disturbances
- Infertility with delayed ovulation

REPERTORIAL APPROACH AND SPECIFIC RUBRICS

For a case of primary infertility associated with diminished ovarian reserve/low AMH, repertorisation should be based on the patient's characteristic symptoms and totality rather than the laboratory value alone. The following rubrics can be considered when actually present in the case.

Kent's Repertory

- Female Genitalia → Sterility — when infertility/sterility is a presenting complaint^[9]
- Female Genitalia → Menses → Irregular — when menstrual irregularity is characteristic^[9]
- Female Genitalia → Menses → Scanty — when the flow is characteristically scanty^[9]
- Female Genitalia → Leucorrhoea — followed by the appropriate colour, consistency or timing subrubric^[9]
- Female Genitalia → Leucorrhoea → Before menses — when discharge has this clear timing relationship^[9]
- Female Genitalia → Pain → Ovaries — when ovarian pain is a characteristic symptom^[9]
- Female Genitalia → Tumours → Ovaries → Cysts — only when an ovarian cyst is clinically established; it should not be substituted for low AMH^[9]

Boericke's Repertory

- Female Sexual System → Conception → Difficult (sterility) — for difficult conception/sterility^[10]
- Female Sexual System → Desire → Diminished or lost — when reduced sexual desire is characteristic^[10]
- Female Sexual System → Menses → Irregular — when present^[10]
- Female Sexual System → Ovaries → Pain — when ovarian pain is characteristic^[10]

Boger-Boenninghausen's Characteristics and Repertory (BBCR)

- Female Organs → Sterility — for the infertility complaint^[11,12]
- Female Organs → Menses → Irregular — for irregular menstruation^[11,12]
- Female Organs → Menses → Absent — only when amenorrhoea is actually present^[11,12]
- Female Organs → Leucorrhoea — with characteristic modalities/concomitants^[11,12]
- Female Organs → Ovaries → Pain — when ovarian pain is present^[11,12]

Synthesis Repertory

- Female Genitalia → Sterility — when infertility is the characteristic clinical problem^[13,14]
- Female Genitalia → Menses → Irregular / Scanty^[13,14]
- Female Genitalia → Leucorrhoea → Before menses — when clearly established^[13,14]
- Female Genitalia → Pain → Ovaries^[13,14]
- Female Genitalia → Tumours → Ovaries → Cysts^[13,14]

Murphy's Homoeopathic Medical Repertory

- Female → Infertility — when infertility is the presenting clinical problem^[15]
- Female → Menses → Scanty — when the menstrual flow is scanty.^[15]
- Female → Cysts → Genitalia → Ovarian — for documented ovarian cysts^[15]
- Female → Enlarged → Genitalia → Ovaries — when ovarian enlargement is established^[15]

8. DISCUSSION

Low AMH represents diminished ovarian reserve and is commonly encountered in infertility clinics. While conventional treatments primarily focus on assisted reproductive techniques, homoeopathy offers a holistic therapeutic approach aimed at correcting systemic imbalance^[1,2,7]

Homoeopathic treatment emphasizes constitutional prescribing and considers the physical, mental, and emotional aspects of the individual. By stimulating the body's inherent healing mechanisms, homoeopathy may help regulate hormonal functions and improve reproductive health.

Although clinical evidence in this area is limited, homoeopathy may serve as a complementary therapeutic option for women seeking non-invasive and holistic fertility care^[7,8]

9. CONCLUSION

Low Anti-Müllerian Hormone is an important marker of ovarian reserve and plays a crucial role in evaluating female fertility potential. Women with low AMH often face challenges in achieving conception. Homoeopathy provides a holistic and individualized therapeutic approach that aims to restore systemic balance and support reproductive health. Further research and well-designed clinical studies are required to evaluate the effectiveness of homoeopathic treatment in infertility associated with diminished ovarian reserve^[2,5,7]

REFERENCES

1. World Health Organization. Guideline for the prevention, diagnosis and treatment of infertility. Geneva: World Health Organization; 2025.
2. American Society for Reproductive Medicine. Testing and interpreting measures of ovarian reserve: a committee opinion. *Fertil Steril*. 2020;114(6):1151-1157. doi:10.1016/j.fertnstert.2020.09.134.
3. Moolhuijsen LME, Visser JA. Anti-Müllerian hormone and ovarian reserve: update on assessing ovarian function. *J Clin Endocrinol Metab*. 2020;105(11):3361-3373. doi:10.1210/clinem/dgaa513.
4. Visser JA, Schipper I, Laven JSE, Themmen APN. Anti-Müllerian hormone: an ovarian reserve marker in primary ovarian insufficiency. *Nat Rev Endocrinol*. 2012;8(6):331-341. doi:10.1038/nrendo.2011.224.
5. Peigné M, et al. Using serum anti-Müllerian hormone levels to predict the chance of live birth after spontaneous or assisted conception: a systematic review and meta-analysis. *Hum Reprod*. 2023;38(9):1789-1806. doi:10.1093/humrep/dead147.
6. Hahnemann S. *Organon of medicine*. 6th ed. New Delhi: B Jain Publishers; 2002.

7. National Center for Complementary and Integrative Health. Homeopathy: what you need to know [Internet]. Bethesda (MD): NCCIH; [cited 2026 Sep 3]. Available from: <https://www.nccih.nih.gov/health/homeopathy>
8. Bergmann J, Luft B, Boehmann S, Runnebaum B, Gerhard I. The efficacy of the complex medication Phyto-Hypophyson L in female, hormone-related sterility: a randomized, placebo-controlled clinical double-blind study. *Gynecol Endocrinol*. 2000;7(4):190-199. doi:10.1159/000021343.
9. Kent JT. Repertory of the homoeopathic materia medica. New Delhi: B Jain Publishers; 2004.
10. Boericke W. Pocket manual of homoeopathic materia medica and repertory. New Delhi: B Jain Publishers; 2002.
11. Boger CM. Boger-Boenninghausen's characteristics and repertory. New Delhi: B Jain Publishers; 2005.
12. Boenninghausen C von. Therapeutic pocket book for homoeopathic physicians. New Delhi: B Jain Publishers; 2000.
13. Schroyens F, editor. Synthesis repertory. 9th ed. New Delhi: B Jain Publishers; 2004.
14. Complete Repertory. In: Homopath/Complete Repertory database.
15. Murphy R. Murphy's homoeopathic medical repertory. 2nd ed. New Delhi: B Jain Publishers; 2000.
16. World Health Organization. Guideline for the prevention, diagnosis and treatment of infertility. Geneva: World Health Organization; 2025.
17. Practice Committee of the American Society for Reproductive Medicine. Fertility evaluation of infertile women: a committee opinion. *Fertil Steril*. 2021;116(5):1255-1265.
18. National Institute for Health and Care Excellence. Fertility problems: assessment and treatment. NICE guideline NG257 . London: NICE; 2026.

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