An Evidence-based Case Report of Female Infertility Treated with Individualized Homeopathic Medicine

Dr. Raj K. Pandit 1, Dr. Swati Pandey 2

1 M.D. (Hom.), Medical Officer, Thiba PHC, Birbhum, West Bengal

2 M.D. (Hom.), Ph.D. Scholar, Dr. M.P.K. Homoeopathic Medical College Hospital & Research Centre, Rajasthan, India

Abstract

Introduction: Infertility is defined as the failure to conceive within one or more years of regular unprotected coitus. The WHO estimates the overall prevalence of primary infertility in India to be between 3.9% and 16.8%. Medical therapy includes the treatment of reversible endocrine or infectious causes of subfertility. In the medical literature, case reports of infertility are scant. We aim to report a case treated with homeopathic constitutional medicine in a lady suffering from infertility.

Case Summary: A woman of 30-year-old, being married for 6 years, presented with a complaint of having no issue despite treatment of infertility for a couple of years by a reproductive endocrinologist. Her subsequent work on infertility revealed poor ovarian reserve. As her husband’s semen analysis report was normal, she was advised for in vitro fertilization (IVF). Later on, convinced by someone they finally landed for homeopathic treatment for her infertility. At this point, she was treated with individualised medicine following the holistic concept of Homeopathy. Constitutional homeopathic medicine Natrum muriaticum was prescribed in centesimal scale and she conceived normally after 3 months of treatment and delivered a healthy male baby at full term. This case report shows the positive role of classical homeopathy on infertility. Causal attribution of changes in her condition to the homeopathic treatment was depicted by the Modified Naranjo Criteria score (Monarch).

Keywords: Homoeopathy, Homeopathy, Individualised Homoeopathic Medicine, Infertility, Natrum Muriaticum, Poor Ovarian Reserve

Introduction

The incidence of female infertility is rapidly increasing among the Indian population which is also a reflection of what is happening all over the world. Today almost one in six couples face difficulty in conceiving. As per World Health Organization, infertility is “a disease of the male and female reproductive system defined by the failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse.” Infertility may be primary and secondary. Primary infertility...
is defined as infertility in a couple who have never conceived, whereas secondary infertility indicates previous pregnancy, although not necessarily a live birth, has occurred.\[^{3,4}\]

An association between the age of the woman and reduced fertility has been well documented. The decline in fecundability begins in the early 30s and accelerates during the late 30s and early 40s.\[^{4}\]

Infertility is a serious health issue worldwide, affecting approximately 8%-10% of couples worldwide.\[^{5}\] The WHO estimates the overall prevalence of primary infertility among reproductive age group women in India to be between 3.9% and 16.8%.\[^{6}\] Broad classification of causes of infertility denotes the source in male reproductive factor (30%) whereas in female reproductive factor (40-55%) and in combined (10-20%); yet remains unexplained (10-15%).\[^{7}\] Among female, the causes of infertility include decreased ovarian reserve, ovulatory disorders (ovulatory factor / anovulation and corpus luteum insufficiency)), tubal injury, blockage, or Para tubal adhesions (including endometriosis with evidence of tubal or peritoneal adhesions), uterine factors (chronic endometritis, fibroid, synechiae, congenital malformation), systemic conditions (including infections or chronic diseases such as autoimmune conditions or chronic renal failure), cervical (chronic cervicitis) and immunologic factors (presence of anti-sperm antibody) and unexplained factors (including endometriosis with no evidence of tubal or peritoneal adhesions).\[^{3,4}\]

The basic investigations that should be performed before starting any infertility treatment are semen analysis, confirmation of ovulation, assessment of ovarian reserve, evaluation of tubal patency and detection of uterine abnormalities.\[^{4,8}\]

Treatment includes identifying and correcting the causes contributing to the infertile state over a short span of time.\[^{9}\]

In a female, ovarian reserve tests are done to assess the quantity and as well as the quality of primordial follicles present in the woman’s ovary. These tests are done to determine how the ovaries will respond to therapy (ovulation induction); in other words, it is the assessment of the woman’s reproductive potential.\[^{8}\]

Ovarian reserve tests include the estimation of the basal level of serum FSH on day 3 (D3), Basal (D3) serum estradiol level (E2), Serum inhibin B (D5), Serum anti-Mullerian Hormone (AMH) parallel to antral follicle count (AFC). Levels of serum AMH is a good predictor of ovarian stimulation response. Its level also comes with the direct proportion of antral follicle count. Levels of AMH (1 ng/mL) declines with age and with poor ovarian reserve.\[^{8}\]

FSH helps in the maturation of ovarian follicles and in the decreased growing follicle in the ovary, the serum FSH level goes higher indirectly as a compensatory mechanism.\[^{10}\] Serum levels of estradiol and inhibin B depend on the pituitary FSH feedback mechanism. AMH is produced by the granulosa cells of the preantral small follicles. The level of AMH is not dependent on the feedback mechanism. This is one of the reasons for which AMH is being considered as a better predictor of ovarian reserve compared to estradiol and inhibin B. Levels of AMH can be measured at any time in the menstrual cycle. AFC is
done by using TVS in the early follicular phase in both ovaries. AFC reflects the primordial follicular pool in the ovary. It, therefore, understood that AMH is qualitative whereas Antral Follicle Count (AFC) is a quantitative marker of ovarian reserve. Thus, decreased AMH, decreased E2 and raised FSH on days 2-4 of the menstrual cycle indicate poor ovarian reserve (POR). Females with decreased AMH and raised FSH on days 2-4 of the menstrual cycle when fail to show progress in growing AFC on optimum hormonal ovarian stimulation are finally considered for IVF.

As a system of medicine, Homeopathy offers an effective treatment in the cases of infertility. A study of 40 women between 18 and 40 years of age having infertility due to polycystic ovarian syndrome, chronic PID and endometriosis evaluate the efficacy of homoeopathic constitutional similimum in the management of female infertility. A case report by Parveen S. and Bhaumik H. in which the individualized homoeopathic medicine Silicea and later Syphilinum was found very effective to control her subfertility due to POR associated with Endometriosis.

Here, we evidently presented a case of primary infertility in a female successfully treated by constitutional homeopathic medicine who has long been treated by a reproductive endocrinologist and finally diagnosed as a case of POR with a piece of advice for IVF.

**Case Report**

**Patient Information**
A 30-year-old, married lady visited with complain of having no issue in the last 6 years of her marriage. Instead of long-term treatment by a fertility specialist, there was no such pregnancy. Her husband’s semen analysis report was within the normal limit, so she was advised for IVF. Her menstrual cycle was regular with scanty flow lasting for 2-3 days only.

She had a history of dysfunctional uterine bleeding (DUB) in her adolescent period. Her father had a history of pulmonary tuberculosis in her family, and her mother was suffering from osteoarthritis.

She was moderate in built (BMI 23 kg/m²) and dark-complexioned in appearance. She got married in 2014 and seeks for natural pregnancy. Finally, being unsuccessful she went to the gynecologist and reproductive endocrinologist. She faced thorough investigation such as hysterosalpingogram (HSG), transvaginal sonography (TVS USG), serum AMH, FSH and serial folliculometry with hormonal ovulation induction. After a complete assessment, she was finally recognized as POR as a cause of infertility and advised for IVF.

**Mental Generals**
She was anxious about having no issue. She was sad, emotionally sensitive and used to weep in alone. She was frustrated and depressed in her life because of not completing her family and usually asked her husband to get a second marriage. She was introverted, short-tempered, and easily gets irritable over small things and gentle/simple words.

**Physical Generals**
Her appetite was good with a desire for fish and craves for sour++ things. (++ indicates the moderate
intensity of the symptom). Her thirst was moderate, and the tongue was moist. The sweat was moderate which was slight offensive in nature and stained the clothes white. Her bowel movement was regular, and the character of stool was semi solid. She had no complaint during urination. The sleep was disturbed with no specific dream. She was sensitive to heat and her thermal reaction was hot. Her menses were regular with scanty flow lasting for 2-3 days only.

Clinical Findings
Her serial folliculometry and the subsequent reproductive hormonal study revealed no dominant follicle in both the ovaries, decreased serum AMH, and increased serum FSH level that indicates a POR. She was treated with injection FSH and injection HCG. (Figure 1) But there was no refinement/improvement in serum AMH level. (Figure 2 & 3)

Repertorial Analysis
Detailed case taking and evaluation of symptoms was done to construct the totality as per the principle laid down in Organon of medicine. Repertorisation was done by HOMPATH Classic. M.D. Repertory version 8.0 software (Mind Technologies, Mumbai, Maharashtra, India) [13] using Kent repertory giving priority to mental generals over physical generals and then to particular symptoms. (Table 1) The symptoms selected for repertorisation were anxious mood, sadness, disposition to weep, short-tempered, irritability, emotionally sensitive, disturbed sleep with a desire for fish, craving for sour things, hot thermal reaction, and scanty menses.

After repertorial analysis and consulting homeopathic materia medica Natrum muriaticum was indicated for the first prescription as it was found to cover all the rubrics (11).

Therapeutic Intervention and Follow Up
One dose of Natrum muriaticum 200c were prescribed on the day of the first visit (04/01/20) along with a placebo for 4 weeks. The patient was asked to take the medicine in the early morning in an empty stomach. Detailed follow-up is summed up in Table 2.

The patient gets conceived (Figure 4 & 5) and serum FSH (Figure 6) and serum AMH level [14] (Figure 7) fell within the normal range of pregnancy after receiving Natrum muriaticum and she delivered a healthy male baby (Figure 8) at full term.

The Modified Naranjo criteria (Monarch) score [15] was used for assessing causal attribution of improvement to the homeopathic medicine and the total score was 9. (Table 3) This explicitly shows the positive causal attribution of the individualised homeopathic treatment towards this case of infertility.

Discussion
Now a days infertility is a major global health issue. The conventional system of medicine is not being able to treat all cases of infertility. A couple failed to conceive despite normal investigation reports. In this scenario, Homeopathy has a definite role to play.
Homeopathy is a simple system of medicine, based on the law of similia similibus curanter, following the concept of holism, which treats the patients not the disease.

This case was a known case of infertility in a woman for the past 6 years of her marriage. Despite regular therapy by a reproductive endocrinologist, she was failed to conceive. She was finally diagnosed as a case of poor ovarian reserve with decreased serum AMH and increased serum FSH level and was advised for IVF.

In this case report, patient’s mental condition, characteristics of physical generals and particulars, were taken into consideration. Because “Without the generals of a case no man can practice Homeopathy, for without these no man can individualize and see distinctions.” [16]

From the concept of homeopathic philosophy, it is clear that pathology is only the expression of a disease and a homeopathic prescription must be based on individualizing symptoms. As per Dr. J.T. Kent, “A true homeopathic prescription cannot be made on pathology, on morbid anatomy, because proving has never been pushed in that direction. Pathology gives us the result of disease, and not the language of nature appealing to the intelligent physician.” [16] therefore “A knowledge of the nature of individual sickness is necessary for a prescription, and this depends upon the ascertainment of the details.” [16]

This case report evidently showed that the one dose of individualized homeopathic medicine, *Natrum muriaticum* in 200 potencies helped her in achieving pregnancy and she delivered a healthy male baby at full term. She was also relieved in her mental symptoms as the case was followed up to the full-term delivery of the child. She thanked to Homeopathy for overcoming her infertile state and making her family complete and happy.

The current case report was comparable to Parveen S. and Bhaumik H. case report [12] in which the individualized homeopathic medicine *Silicea* and later *Syphilinum* were found to be very effective in controlling her subfertility due to POR associated with Endometriosis and very close to the Kalampokas T. et al. study in which *Sepia, Medorhinhum, Calcarea carbonica, Ignatia* and *Cactus* drugs were used as a constitutional medicine for their infertile state due to various causes. [17]

In this case report, individualised medicine *Natrum muriaticum* was set up the pregnancy, which is corroborated with the study of Lobo A., D'Cunha P., Lobo B. [1] in which 16 out of 40 patients were prescribed *Natrum muriaticum* and patients get conceived. A case study [18] where 7 out of 12 cases of infertility were successfully treated with individualized medicine, found to be similar to this case report.

The main strength of this case report was that the patient gets conceived within a short period of time, being treated by a reproductive endocrinologist for the past few years and she delivered a healthy male baby at full term. No side effects were observed during the treatment period rather her serum FSH & AMH level fell within the normal range. She was also relieved in her mental symptoms and Monarch was used for assessing causal attribution of improvement to the homeopathic medicine.
As it was a case report, a study may be carried out on a large sample size which may provide more logical statistical analysis.

This case report emphasized the relevance of general symptoms above pathological symptoms, importance of holistic approach as well as the need of constitutional medicine in treating female infertility. In contrast, in modern medicine, the most invasive and expensive treatment option is available. Hormonal therapy can cause a variety of adverse effects, including emotional instability or depression, visual changes, hot flushes, bloating, and ovarian hyperstimulation syndrome. Therefore, from the standpoint of invasiveness, and a range of side effects Homeopathy is a safe, cost effective and successful traditional way of therapy.

Last, but not the least, “while Homeopathy itself is a perfect science, its truth is only partially known. The truth itself relates to the divine, the knowledge relates to the man.” - Dr. J.T. Kent

**Conclusion**

The present case report evidently suggests the role of constitutional homeopathic treatment in the management of infertile state over a short span of time and restoration of the well-being of a patient. This case has highlighted the importance of a holistic approach over the clinical diagnosis in the treatment considering the individuality of a patient for remedy selection. However, it would not be appropriate to generalize the usefulness of Homeopathy in cases of infertility on the basis of this single case report. Therefore, skillful scientifically designed studies are required to demonstrate the effectiveness and efficacy of Homeopathy in case of Infertility for future outcome.

**References**


Table 1: Repertorisation Chart
Table 2: Follow Up and Intervention

<table>
<thead>
<tr>
<th>Date of Visit</th>
<th>Symptoms</th>
<th>Investigation Findings</th>
<th>Prescription</th>
</tr>
</thead>
<tbody>
<tr>
<td>04/01/20</td>
<td>Baseline Presentation LMP-30/12/19</td>
<td></td>
<td><em>Natrum muriaticum</em> 200/1 Dose/OD</td>
</tr>
<tr>
<td>01/02/20</td>
<td>Anger and Irritability-↓ LMP-01/02/20</td>
<td></td>
<td>Placebo</td>
</tr>
<tr>
<td>29/02/20</td>
<td>Anger and Irritability- ↓↓ Sleep-</td>
<td></td>
<td>Placebo</td>
</tr>
<tr>
<td>20/04/20</td>
<td>No menses, 17 days crossed from LMP (03/03/20). Advised for a urine Pregnancy test</td>
<td>The urine pregnancy test was positive. Advised for maternal serum β- HCG and USG of the lower abdomen.</td>
<td>Placebo</td>
</tr>
<tr>
<td>22/04/20</td>
<td>She was so happy &amp; cheerful and gain confidence.</td>
<td>β- HCG (maternal)-25000 mIU/ml (Figure-5) USG-Single live foetus (Figure-6)</td>
<td>Placebo</td>
</tr>
</tbody>
</table>

LMP: Last Menstrual Period, OD: Once Daily, ↓: Decreased, ↓↓: More Decreased

The patient was continually observed up to the full-term delivery of the baby and no repetition of medicine was done with remarkable improvement in mental symptoms.

Table 3: Assessment by Modified Naranjo Criteria Score

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Item</th>
<th>Yes</th>
<th>No</th>
<th>Not Sure / N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Was there an improvement in the main symptom or condition for which the homeopathic medicine was prescribed?</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Did the clinical improvement occur within a plausible Time frame relative to the drug intake?</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Was there an initial aggravation of symptom? (Need to Define in glossary)</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Did the effect encompass more than the main symptom or condition, i.e., were other symptoms ultimately improved or changed?</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Did overall well-being improve? (suggest using validated scale)</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Question</td>
<td>Score</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>--------------------------------------------------------------------------</td>
<td>-------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6(A)</td>
<td>Direction of cure: Did some symptoms improve in the opposite order of the development of symptoms of the disease?</td>
<td>0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 6(B) | Direction of cure: Did at least two of the following aspects apply to the order of improvement of symptoms?:  
• From organs of more importance to those of less importance  
• From deeper to more superficial aspects of the individual  
• From the top downwards | 0     |
| 7   | Did “old symptoms” (defined as non-seasonal and non-cyclical symptoms that were previously thought to have resolved) reappear temporarily during the course of improvement? | 0     |
| 8   | Are there alternate causes (other than the medicine) that – with a high probability – could have caused the improvement? (Consider known course of disease, other forms of treatment, and other clinically relevant interventions) | +1    |
| 9   | Was the health improvement confirmed by any objective evidence (e.g., lab test, clinical observation, etc.)? | +2    |
| 10  | Did repeat dosing, if conducted, create similar clinical improvement?     | +1    |

**N/A:** Not Available
Figure 1: Prescription on 01/10/19 before Treatment

1. T. Actin 1/2 OD x 10
2. T. Levrole 0.5% 1/2 OD PO BD 3/10-3/12
3. Multifocal 1% OD Dr. O9 Dr.
4. Flucloromycine 0.5% OD 4x/day.
5. T. Euthemone 1% OD BD x 3 weeks
6. T. Euthemone 1% OD BD x 3 weeks
7. Inf. huc 0.05 (5mL) 10 1m x 1 hour for 7 days
8. Inf. huc 0.05 (5mL) 10 1m x 1 hour for 7 days

Dr.

Euthemone 1/10/19

S.C.

22/10/19
Before Treatment

Figure 2: Serum AMH Level on 25/01/19

<table>
<thead>
<tr>
<th>Investigation</th>
<th>Observed Value</th>
<th>Unit</th>
<th>Biological Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMH Mullerian Inhibiting Substance</td>
<td>0.588</td>
<td>ng/mL</td>
<td>0.8-9.5</td>
</tr>
</tbody>
</table>

Interpretation:

AMH is a dimeric glycoprotein hormone belonging to the TGFB family, produced by Sertoli cells by ovarian follicular granulosa cells up to antral stage in females.

During reproductive age, follicular AMH production begins during the primary stage, peaks in preovulatory stages & has influence on follicular sensitivity to FSH which is important in selection for follicular dominance. AMH levels thus represent the pool or number of primordial follicles but not the quality of oocytes. AMH does vary significantly during menstrual cycle & hence can be measured independently of day of cycle.

- Polycystic ovarian syndrome can elevate AMH 2 to 5 fold higher than age-specific reference ranges & predict anovulatory, irregular cycles.
- Ovarian tumours like Granulosa cell tumour are often associated with higher AMH.
- Obese women are often associated with diminished ovarian reserve & can have 65% lower mean AMH levels than non-obese women.
- A combination of Age, Ultrasonogram markers: ovarian volume and Antral follicle count, AMH level & FSH level are useful for optimal assessment of ovarian reserve. Studies in various fertility clinics are ongoing to establish optimal AMH concentrations for predicting response to in vitro fertilization, however, given below is suggested interpretive reference.

<table>
<thead>
<tr>
<th>AMH levels (ng/mL)</th>
<th>Suggested patient Categorization for fertility based on AMH for age group (20 to 45 yrs)</th>
<th>Anticipated Antral Follicle Counts</th>
<th>Anticipated FSH levels (day 3)</th>
<th>Anticipated Response to IVF/COH cycle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 0.3</td>
<td>Very Low</td>
<td>Below 4</td>
<td>Above 20</td>
<td>Negligible/poor</td>
</tr>
<tr>
<td>0.3 to 2.19</td>
<td>Low</td>
<td>4-10</td>
<td>Normal</td>
<td>Reduced</td>
</tr>
<tr>
<td>2.19 to 4</td>
<td>Satisfactory</td>
<td>11-29</td>
<td>Within reference range or between 11-35</td>
<td>Normal/Abnormal</td>
</tr>
</tbody>
</table>
| Above 4            | Optimal                                                                                 | Above 30                         | Within reference range, often between 10-15 or above 15 | Possibly Excessive                   

Conversion of AMH levels from ng/mL to pmol/L can be performed by using equation: 1 ng/mL = 7.14 pmol/L

References:

- Age-specific serum antimullerian hormone levels in women with and without polycystic ovary syndrome. Fertility and Sterility Vol 102, No. 1, July 2014
Figure 3: Serum AMH Level on 08/12/19

[Image of medical report]

**AMH Mullerian Inhibiting Substance**

**Observed Value:** 0.47 ng/mL

**Interpretation:**
AMH is a dimeric glycoprotein hormone belonging to the TGF-β family, produced by Sertoli cells by ovarian follicular granulosa cells, up to antral stage in females.

During reproductive age, follicular AMH production begins during the primary stage, peaks in preovulatory stage & has influence on follicular sensitivity to FSH which is important in selection for follicular dominance. AMH levels thus represent the pool or number of primordial follicles but not the quality of oocytes. AMH does not vary significantly during menstrual cycle & hence can be measured independently of day of cycle.

- Polycystic ovarian syndrome can elevate AMH 2 to 5 fold higher than age specific reference ranges & predict anovulatory, irregular cycles. Ovarian tumours like Granulosa cell tumours or with AMH.
- Obese women are often associated with diminished ovarian reserve & can have 65% lower mean AMH levels than non-obese women.
- A combination of Age, Ultrasound markers: ovary volume and Antral follicle count. AMH level & FSH level are useful for optimal assessment of ovarian reserve. Studies in various fertility clinics are ongoing to establish optimal AMH concentrations for predicting response to IVF stimulation. However, given below is suggested interpretative reference.

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<th>Suggested patient categorization for fertility</th>
<th>Anticipated Antral Follicle Counts</th>
<th>Anticipated FSH levels (day 3)</th>
<th>Anticipated Response to IVF/COH cycle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 0.1</td>
<td>Very Low</td>
<td>Rare</td>
<td>Below 20</td>
<td>Negligible</td>
</tr>
<tr>
<td>0.3 to 2.19</td>
<td>Low</td>
<td>2 to 10</td>
<td>Usually 16-20</td>
<td>Reduced</td>
</tr>
<tr>
<td>2.19 to 4</td>
<td>Satisfactory</td>
<td>Within range of 11-15</td>
<td>Safe/Normal</td>
<td></td>
</tr>
<tr>
<td>Above 4</td>
<td>Optimal</td>
<td>Upt to 30 &amp; Above</td>
<td>Within range of 10-15 or above 15</td>
<td>Possibly excessive</td>
</tr>
</tbody>
</table>

For conversion of AMH levels in nanograms per milliliter, we can perform by using equation: 1 ng/ml = 7.14 pmol/L.

**References:**
- Age-specific serum anti-mullerian hormone levels in women with and without polycystic ovary syndrome. Fertility and Sterility Vol. 102. No. 1, July 2014
- Human Reprod. 2007 Mar; 22(3)
After Treatment

Figure 4: Serum β-HCG Level on 13/05/20

<table>
<thead>
<tr>
<th>Test Name</th>
<th>Result</th>
<th>Unit</th>
<th>Ref. Range</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beta-HCG (Maternal)</td>
<td>25,000</td>
<td>mIU/ml</td>
<td>As Per Expected Values</td>
<td>Chemiluminescence</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Microparticulate</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Immunoassay</td>
</tr>
</tbody>
</table>

**EXPECTED VALUES**

In a clinically healthy population and with no tumour pathologies, the following values were found:

- **MALE AND NON-PREGNANT WOMEN**: < 5.0 mIU/ml
- **Early Pregnancy**: 5.0 – 25.0 mIU/ml

According to American Pregnancy Association, the following charts are normal ranges of HCG for the number of weeks after the woman’s last menstrual period can be followed.

<table>
<thead>
<tr>
<th>Weeks from last LMP</th>
<th>Range</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 weeks</td>
<td>(~5.0)</td>
<td>mIU/ml</td>
</tr>
<tr>
<td>4 weeks</td>
<td>(~5-426)</td>
<td>mIU/ml</td>
</tr>
<tr>
<td>5 weeks</td>
<td>(18 - 7,240)</td>
<td>mIU/ml</td>
</tr>
<tr>
<td>7-8 weeks</td>
<td>(~1,000 - 56,000)</td>
<td>mIU/ml</td>
</tr>
<tr>
<td>9-12 weeks</td>
<td>(~25,700 - 268,000)</td>
<td>mIU/ml</td>
</tr>
<tr>
<td>13-16 weeks</td>
<td>(~13,209-254,000)</td>
<td>mIU/ml</td>
</tr>
<tr>
<td>17-24 weeks</td>
<td>(~4,000-165,400)</td>
<td>mIU/ml</td>
</tr>
<tr>
<td>25-40 weeks</td>
<td>(~3,640 - 117,000)</td>
<td>mIU/ml</td>
</tr>
<tr>
<td>Non-pregnant women</td>
<td>(~5.0)</td>
<td>mIU/ml</td>
</tr>
<tr>
<td>Postmenopausal women</td>
<td>(~9.5)</td>
<td>mIU/ml</td>
</tr>
</tbody>
</table>

**REMARK**: Since the HCG concentration in serum increases rapidly at the initial stages of pregnancy, the result can be confirmed by a second assay on a sample collected 48 h later. Likewise, recent injections of HCG used in therapeutic procedures can also result in increased values. HCG levels in early pregnancy usually double every 3-5 days with an increase of at least 60% every two days. But again, this depends on the individual woman and whether she is carrying one or more embryos. How she as an individual responds to pregnancy and how her body reacts is as unique as any other. It is difficult to cite any normal quantitative HCG level for any point in pregnancy, because individual women have wide variations in HCG levels based on the lengths of their menstrual cycles and other factors. The HCG doubling time, even two separate blood tests spread over a period of days, usually provides more useful information than a single HCG level when evaluating a pregnancy.

It is important to remember that these numbers are intended as a guideline only. They are not definitive and are just meant to give an indication of what can be an average HCG range. Every woman and her pregnancy are unique and what is considered normal for one may not be for another. If you have any concerns about your individual HCG readings then it is important that you seek reassurance from your health care professional.

*** End Of Report ***

DR P. BHATTACHARYA
MD MRBS
CONSULTANT PATHOLOGIST

If result is unexpected or alarming, please contact the Lab for revival of the result. Not for Medico-legal purpose.
Figure 5: USG of Early Pregnancy on 13/05/20

Investigation: ULTRASONOGRAPHY OF EARLY PREGNANCY

Gravid uterus shows a single well defined gestational sac in upper part of its cavity showing a single visible live embryo and a single well defined yolk sac.

Embryonic heart beat is seen on real time scan.

EHR: 159 BPM.

Cervix length: 29mm

G.A by CRL (15 mm): 7 weeks 6 days.

Decidual reaction is good.

Internal os is closed.

No myometrial and adnexal SOL is seen.

Uterus measures: 84 mm x 69 mm x 62mm

IMPRESSION: Early live intrauterine pregnancy of 7 weeks 6 days gestational maturity.

- GA by LMP (01/03/2020): 10 weeks 1 day (small for date).
- Suggested clinical correlation.

DR. R. CHAKRAVARTY
DDO, MSBS
CONSULTANT RADIOLOGIST

If result is unexpected or alarming please contact the Lab for revival of the result. Not for Medico-legal purpose.
Figure 6: Serum FSH & E2 Level on 04/06/20
Figure 7: Serum AMH Level on 04/06/20

![Image of a medical test result showing serum AMH level measurement]
Figure 8: Birth Certificate on 10/12/20