**CASE REPORT**

**Case Report: Ayurvedic Vamana and Virechana treatment in hypothyroidism and conception in a woman seeking infertility treatment at an ART clinic [version 1; peer review: awaiting peer review]**

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**Abstract**

The most common condition impacting patients who present with ovulatory failure leading to infertility is hypothyroidism. Normal thyroxin levels and its milder counterpart, subclinical hypothyroidism, which is characterised by raised thyroid stimulating hormone (TSH) levels, may also be a factor in altered reproductive function. Conventional and persistent *Panchkarma* procedures, which include *Vamana* and *Virechana Karma*, foster wellness. *Vamana* and *Virechana Karma* symbolise the development of emesis and purification, resulting in improvements in the body’s capacity to eradicate toxins, especially through the intestine. *Sroto shodhaka, Agnivardhaka*, and *dosa pratyanika chikitsa* are the best therapies for hypothyroidism, assuming the prevalence of the *Kapha* and *Pitta doshas*. We found that *Vamana* and *Virechana* helped in the treatment of hypothyroidism. We report a case highlighting the beneficial effects of ayurvedic treatment of *Vamana* and *Virechana* in a woman with hypothyroidism seeking infertility treatment at our centre.

**Keywords**

Hypothyroidism, infertility, Vamana, ovulatory dysfunction, Thyroxine

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**Introduction**

Infertility is defined as a failure to get pregnant after twelve months for women over the age of 30-40 or after one year of regular, unprotected sexual intercourse. Over the past several decades, the thyroid-stimulating hormone (TSH) was diagnosed to have a role in reproductive issues such as ovulatory dysfunction, infertility, miscarriage, and harmful maternal problems (gestational hypertension, preclampsia, anaemia). Numerous studies have connected the physiology of reproduction, ovarian function, and thyroid function. The menstrual cycle, oestrogen and androgen metabolism, folliculogenesis, and endometrial receptivity may all be affected by TSH. The mainstream Indian medical practice referred to as Ayurveda continues to be among the oldest remaining common with an extensive intellectual and experimental foundation. The three fundamental ideas, known as doshas (vata, pitta, and kapha), are drawn from the five components of studies. Vata and its sub-doshas regulate input/output processes and motion. Pitta and its sub-doshas regulate throughout, turnover, and thus energy, and Kapha and its sub-doshas regulate storage, structure, and lubrication. These fundamental physiological processes in living systems maintain their identity throughout their life history. Several instances of lifestyle disorders include diabetes insipidus, hypertension, and thyroid dysfunction. Thyroid disease is becoming more prevalent in society on a daily basis. In general population, hypothyroidism affects 3.8–6% of people. There are two types of thyroid dysfunction: overactivity (hyperthyroidism) and underactivity (hypothyroidism). The thyroid gland produces insufficient thyroid hormone in hyperthyroidism. An underactive thyroid is a common description of hypothyroidism. A common problem in women is hypothyroidism, who tend to demonstrate ovulatory disorders leading to infertility. Subclinical hypothyroidism (SH), a modestly raised level of TSH, is a milder form of hypothyroidism. The most frequent side effects of hypothyroidism include infertility, weight issues, depression, and chronic fatigue. The guru (heaviness) attribute of the kapha dosha is present in SH. It also possesses the manda, or dullness, attribute. Reducing manda guna of the Kapha dosha should be the primary goal of ayurvedic treatment for thyroid problems like hypothyroidism.

In this case report, a 29-year-old woman with hypothyroidism who had been married for the previous seven years is featured. The patient TSH level returned to within tentative normal range after receiving *Vamana Virechana* treatment to diagnosed her doshas, which contributed to deal with patient’s infertility difficulties and thus, resulted in a positive clinical pregnancy.

**Case presentation**

**Patient's history**

A 29-year-old South Asian woman who was a housewife by profession, with irregular menstrual cycles and infertility came to consult for her condition at our infertility centre. Thyroxine (T4) and triiodothyronine (T3) are the two main thyroid hormones that are inadequately produced by the thyroid gland in hypothyroidism. These hormones are crucial for controlling metabolism and maintaining the normal functioning of several organs and bodily systems.

Patient husband worked as a businessman. They were married for five years with no earlier conception. They were diagnosed with primary infertility. The family medical record reveals that there were no history of smoking, alcoholism or any other substance use. However, the female patient had undergone cholecystectomy two years prior to seeking treatment for infertility. Treatment, although the thyroxin medication was continued.

**Family history**

There was no family history of thyroid disease or any other affliction or disorder in the patient. Additionally, there was no history of infertility in the family.

**Clinical findings**

**Female examination**

According to laboratory tests, patient TSH level was 7.91 mU/L, which was over the average limit that was applicable to TSH. This could indicate hypothyroidism. The research of the patient’s husband’s semen analysis discovered a 79 million/mL count and 85% motility. It demonstrates that her male partner was not a factor in the couple’s infertility. Further research on haemoglobin showed 14 g/dL in females. Both a urine test and fasting plasma glucose results were within normal range. The results obtained from the pelvic uterine ultrasound were normal, and the ovaries seemed to be in good health. The other parts of the clinical examination seem to be in normal condition. The thyroid hormone, also known as profile (T3, T4, anti-thyroid peroxidase (Anti-TPO), and TSH was tested using an access immunoassay equipment. In addition, a urine test and fasting plasma glucose results were within normal range. The results of the pelvic uterine ultrasound were normal, and the ovaries appeared in optimal condition. The rest of the clinical examination average appeared to be in normal condition. The thyroid hormone profile (T3, T4, anti-thyroid peroxidase (Anti-TPO)) was tested using an access immunoassay instrument. T3 reported hormonal profile was 0.50 ng/mL, while T4 was four g/dL. T3 reported hormonal profile was 0.50 ng/mL, whereas T4 was 4 g/dL.
An important biomarker for determining a woman’s ovarian reserve is AMH (anti-Mullerian hormone). A normal ovarian reserve is often predicted by serum AMH levels between 2 to 6.8 ng/mL. The patient’s serum AMH value in our case study was 2.6 ng/mL. TSH levels of 15.91 mIU/L, FSH (follicle stimulating hormone) levels of 4.86 mIU/mL, oestrogen levels of 515.525 pg/mL, and LH (luteinizing hormone) levels of 8.85 IU/mL were identified in the patient’s hormonal level.

Performance quality of TSH hormones was determined using a quality control serum (Lyphocheck - Immunoassay Additionally from Bio-Rad, Hercules, CA). Anti-TPO antibody levels were greater than 30 nmol/L, and the T4 level was 0.8 ng/dL; T3 levels were below 100 ng/dL.

**Diagnostic and treatment**

Supplying of thyroid supplement however, didn’t result in considerable improvement in our patient. Hence, we opted for ayurvedic medications. We advised the patient to start with Go Ghrita 25 mL once a day on an empty stomach at around 7 am every day. The dosage was recommended to be gradually increased to 20 mL till the seventh day of the treatment. She was also advised medications for *Vamana* in the combination of Madan-Phal Pippali Churna 5 g along with *Saindhava Lavana* 1 g and honey 10 g once a day around 7 am on an empty stomach. For *virechana* medication, a combination of *Kwath* made from *Draksha Churna* 18 g, *Aragwadha Churna* 18 g, *Haritiki Churna* 20 g, *Kutaki Churna* 10 g in 500 mL of water, reducing it to 55 mL with *Erand Tailam* 40 mL, was advised to be taken in the evening. This treatment was advised to be followed for 30 days. After 30 days of treatment, we conducted a laboratory investigation of her thyroid profile again. Her TSH value was found to be 1.05 mIU/mL. This value indicated a normal thyroid parameter. We then planned to do further IVF treatment on the patient. ATSH was reduced to 3.73 mIU/mL with the administration of 125 mcg of thyroid supplement tablets over a year in previous treatments.

She was started with a short antagonist protocol where in we started GnRH, clomiphene citrate and letrozole on the first day of her menstrual cycle. On day 13 of her menstrual cycle, we triggered the patient with HCG for the final preparation of ovum pickup (OPU). The maturation of follicles was observed via ultrasonography. Then, 36 hours after the trigger, we performed the OPU procedure on the patient. Four MII oocytes were retrieved during the procedure, and we then performed ICSI (intra-cytoplasmic sperm injection) on the oocytes. We conducted a fresh embryo transfer for the patient.

**Follow up and outcomes**

The patient was discharged after the embryo transfer went smoothly, with the recommendation to follow up. She was also instructed on the administration of intralipid injection, 500 mg of hydroxyprogesterone, and injectable human chorionic gonadotrophin (HCG). After two weeks had passed since the embryo transfer, we took a blood sample from the patient and sent it to our lab centre in Wardha for an HCG test. The final report was favourable, positive for pregnancy.

**Discussion**

Excessive hypothyroidism often results in infertility and delayed implantation. The direct effects that thyroid hormones have on oocytes indicate that they directly interfere with the normal function of the ovaries. They have an impact on how oestrogen levels of 515.525 pg/mL, and LH (luteinizing hormone) levels of 8.85 IU/mL were identified in the patient’s hormonal level.

Hypothyroidism can be recognised according to the Ayurvedic perspective as a broad spectrum of affliction encompassing *Kapha dusti* (*Kapha*, one of Ayurveda’s three *doshas*, is associated with the elements of earth and water. The body’s lubrication, structure, and stability are all under its control, and an imbalance in *Kapha* can make one feel heavy and exhausted). *Rasa Dhatu dusti* (imbalance of plasma tissue), *Udanavruta Samana* (the Sanskrit word “Udanavruta Samana” can be found in the medication system known as Ayurveda. It represents a specific type of pranayama, or breath control method, used to balance and integrate the body’s energies. The breath is directed upward and outward in *Udanavruta Samana*, releasing the “udana” energy and nurturing balance), *Kaphavruta Samana*, *Agnimandya* (slowness of digestion, loss of appetite), *Kaphaja gali gaunda* (Dysentry phlegm mumps), among others. The clinical presentation resembles the *Kapha-associated Pitta distress with vitiation of Vata* spurred on by Margavarana and predominantly *Rasavaha* and *Medovaha rrodusti lakshans*, which are frequently categorised as *Bahudosha-astha*. If hypothyroidism gets treated early, it can have a significant impact on the speed at which women with thyroid antibodies become pregnant (on average, three to four years later), as well as the probability the pregnancy will be miscarried. Considering its high prevalence in infertile women, hypothyroidism should be ruled out during general examination as often as possible. After a few attempts, we treated the patient with an Ayurvedic treatment named *Kapha dosha. Guru*, which means heaviness, is a characteristic of the *Kapha dosha*. Additionally, it had the *manda* or dullness, attribute. Reducing *manda guna* of the *Kapha dosha* should be the main goal of ayurvedic treatment for thyroid disorders,
including hypothyroidism. By getting TSH levels in the normal range, our patient’s SH was cured. It is important that TSH levels are in the normal range (0.5 to 5.0 mIU/L) for successful conception.

Conventionally and persistent Panchkarma procedures, which include Vamana and Virechana Karma, foster wellness. Vamana and Virechana Karma symbolise the development of emesis and purgation, resulting in improvements in the body’s capacity to eradicate toxins, especially through the intestine. This Karma tends to be classified into three categories: Mridu (mild), Madhya (middle), and Tikshna (strong), depending on the level of severity of the process. These Karma are additionally taken out in three steps: Poorva Karma, Pradhan Karma, and Pashchut Karma, much like other Karma. Before conducting this Karma, Sneha Pana, fomentation, and oil massage are recommended to liquefy Dosha and toxins. Sroto shodhaka, Aagnivaridhaka, and dosha pratyanika chikitsa are the best therapies for hypothyroidism, assuming the prevalence of the Kapha and Pitta doshas.

This formed the preliminary basis of our application of Vamana and Virechana medication in our patient. It was observed that patient thyroid profile was significantly improved upon the administration of ayurvedic medication, which resulted in a positive clinical pregnancy outcome.

Conclusions

This case report examined the impact of ayurvedic Vamana and Virechana medication for the treatment of hypothyroidism, which resulted in infertility in our patient. Our result indicated that there was considerable significant improvement in the levels of TSH, which is a prerequisite factor for the determination of thyroid profile. Performing IVF treatment in our patient resulted in positive clinical pregnancy outcome.

Note

The study highlights the beneficial effects of Ayurveda an antiquated technique. We should carefully consider this particular concept.

Consent

The couple registered in our infertility clinic gave their written informed consent for the publication of this case report.

Data availability

All data underlying the results are available as part of the article, and no additional data sources are required.

References

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