



Ayurvedic Management Of Hypothyroidism Induced Infertility – A Case Study

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ABSTRACT

Hypothyroidism and hyperprolactinemia adversely affect the fertility potential of women by impairing ovulatory function. Hypothyroidism promotes hyperprolactinemia which leads to irregular periods, anovulation and ultimately results in infertility. This is a case report of the primary infertility of a couple. A 27year old hypothyroid female came for consultation (Dec 2023) with the complaint of failure to conceive since 1.5 years & history of irregular menses. She was under treatment- Tab. Thyroxin 100 mcg since June 2023. She took treatment for irregular menses and for conception 1 year back at a private allopathic hospital & was advised 3 months OCP, tried naturally for 3 months. As she had anovulatory cycles, the ovulation induction was done in July, August and September 2023. After getting unsatisfactory results, she came to us in December 2023. Ayurveda treatment was planned in this case to evaluate its role to address hormonal imbalance, ensuring regular ovulation, and thereby helping to have a normal pregnancy. Based on the parameters of Ayurvedic Science, this case was diagnosed as Vandhyatva (~infertility), which was treated with both Shodhana (~bio cleansing therapy) and Shamana chikitsa (~therapy which is aimed at mitigating the disease by pacifying Dosha). After the treatment, TSH was reduced from 8.78 to 0.72 μ IU/mL. The intervention resulted in conception within six months.

Keywords: Hypothyroidism, Hyperprolactinemia, Infertility, Virechana, Nasya.

INTRODUCTION:

Thyroid disorders are the most common endocrine problems in women. In most of the cases, thyroid can lead to infertility or miscarriages. The etiology of infertility is multifactorial with thyroid disorders as the most common presenting factor, hypothyroidism in particular. Infertility in women can lead to emotional and psychological stress & it can result in menstrual irregularities and anovulatory cycles, thus affecting the fertility.

Thyroid disorders exert a significant influence on folliculogenesis, fertilization, and implantation processes. Thyroid autoimmunity, although associated with diminished ovarian reserve, does not typically necessitate levothyroxine therapy. On the other hand, both subclinical and overt hypothyroidism often require levothyroxine treatment to enhance fertility and optimize obstetric outcomes. Hyperthyroidism warrants prompt intervention due to its heightened risk of miscarriage. Furthermore, thyroid dysfunction exerts effects on assisted reproductive technologies,

underscoring the importance of achieving euthyroidism prior to ovarian stimulation.ⁱ The amount of thyrotropin releasing hormone (TRH) from the hypothalamus is markedly increased by inhibition of pyroglutamyl peptidase II, the enzyme catalyzing TRH. The increased TRH in hypothyroidism causes increased thyroid-stimulating hormone and PRL secretion by pituitary, leading to infertility and galactorrhea. Thyroid peroxidase antibodies (anti-TPO) may further aggravate the impact of hypothyroidism on the incidence of complications during pregnancy, including miscarriage and premature delivery.ⁱⁱ Screening of thyroid function is recommended as part of a fertility workup.ⁱⁱⁱ In recent years, a neuropeptide called kisspeptin, encoded by Kiss1 gene, a potent stimulus for GnRH secretion, has been recognized, which suggests a future direction of treatment with kisspeptin and benefits the fertility induction among hyperprolactinemic infertile patients. Untreated hypothyroidism during pregnancy can lead to subfertility, fetal deaths, premature deliveries, and

abortions. Therefore, women planning for pregnancy and infertile women should be assessed for thyroid hormones and serum PRL.^{iv} Prevalence of hypothyroidism in the reproductive age group is 2–4% and has been shown to be the cause of infertility and habitual abortion. Hypothyroidism can be easily detected by assessing TSH levels in the blood. A slight increase in TSH levels with normal T3 and T4 indicates subclinical hypothyroidism whereas high TSH levels accompanied by low T3 and T4 levels indicate clinical hypothyroidism. Subclinical hypothyroidism is more common. It is extremely important to diagnose and treat the subclinical hypothyroidism for pregnancy and to maintain it unless there are other independent risk factors. Many infertile women with hypothyroidism had associated hyperprolactinemia due to increased production of thyrotropin releasing hormone (TRH) in ovulatory dysfunction. It has been recommended that in the presence of raised PRL, the treatment should be first given to correct the hypothyroidism before evaluating other causes of raised PRL. Measurement of TSH and PRL is routinely done as a part of infertility workup.^v

आयुर्वर्णो बलं स्वास्थ्यमुत्साहोपचयौ प्रभा।

ओजस्तेजोऽग्नयः प्राणाश्चोक्ता देहाग्निहेतुकाः॥

शान्तेऽग्नौ म्रियते, युक्ते चिरं जीवत्यनामयः।

रोगी स्याद्विकृते, मूलमग्निस्तस्मान्निरुच्यते॥ (च. चि. १५/३,४)^{vi}

Acharya Charaka has explained the importance of *Agni* in *Chikitsa Sthana* 15. Hypothyroidism can be compared with *Dhatvagni Mandya* and especially *Meda Dhatvagni Mandya* and it will eventually cause further *Dhatu Vikriti*. By doing *Majja Vikriti* it can hamper hypothalamus and pituitary function and by *Shukra Vikriti*, it will become the culprit for anovulation. The condition can be considered as *Vandhyatva* (~infertility) due to *Agnimandya* (~diminution of digestive fire) by the vitiation of *Tridosha* mainly *Vata* & *Kapha*, (~three regulatory functional factors of the body) This vitiated *Kapha* and *Vata dosha* leading to *Jatharagni mandya* (~diminution of digestive fire) *Jatharagni mandya* leads to *Dhatvagni mandya* (~diminution of metabolic factors located in *Dhatu*) *Rasa dhatu* (~primary product of digested food), *Rakta dhatu* (~blood tissue) which results in *Artava dushti* (~menstrual disorders) Ultimately leads to *Vandhyatva*.

CASE HISTORY:

- A 27 years old female comes for consultation (Dec 2023) with the complaint of failure to conceive since 1.5 year; history of irregular menses. 3 years of marital life and known case of Hypothyroidism and under treatment (Tab. Thyroxin 100 mcg) since 7 months. She has no history of HTN/DM/IHD or any major illness and no significant surgical history.

- She took treatment for irregular menses and for conception 1 year back at a private allopathic & was advised 3 months OCP, tried naturally for 3 months, As she had anovulatory cycles, the ovulation induction was done in July, August & September 2023. After getting unsatisfactory results, she came to Streeroga OPD, ITRA, Jamnagar in December 2023.
- On examination, it was found that she was belonging to Kaphapittaj Prakriti and there was no abnormal finding seen in general and systemic examination. Menstrual history – 5 day/28 to 32 days, regular, painful (VAS-4). before treatment. Mic. /H – 5-6 time/day. B/H – 1 time/day. P/S- no abnormality found. P/V- Anteflex Anteverted uterus, No tenderness in Cx. BP-110/70mmHg, pulse-70/min, wt.66 kg and ht. 151 cm.

TREATMENT PROTOCOL:

The treatment was carried out with the following medicines (Table 1) for 5 months. During this period she was advised to take Laghu, Supachya Aahara (which is easy to digest) and to avoid Divaswapna (sleeping at day time) (table no. 1)

TREATMENT	MEDICINE
1)Virechana Karma:	Deepana-Pachana with Vaishvanar Choor (BD B/M) Snehapana with Triphala Ghrita (Increasing first dose 30 ml) Sarvanga Abhyanga with Bala taila Sarvanga Bashpa Swedana Virechana With Trivruttavaleha 65 gm + Kwatha QS; f/b Abhyanga swedana
2)Basti Karma	Dashmooladi Yoga Basti (In next cycle of)
3)Nasya Karma	Mahakalyanaka Ghrita 8-8 drops in each cycle
4)Shaman Aushadha	1)Maha-Kalyanak Ghrit 1 tsp in morning stomach with LWW 2)Chandraprabha Vati 1 - 1 - 1 A/F with v 3)Eranda Bhrushta Haritaki churna(5 gm) LWW
Table no. 1	

OBSERVATION & RESULT:

The mentioned protocol successfully achieved Ovulatory cycles in a hypothyroid patient with anovulatory cycles & The intervention ultimately resulted in conception within six months. (table no. 2)

DISCUSSION:

Virechana Karma was done for Shodhana purpose.

Dashmooladi yoga basti for Vata &

Kapha shamana. Also, for Shodhana of remaining dosha. Basti is best procedure for Pakvashayagat Dosha or Roga hence it was planned after virechana. Basti was f/b *Nasya* with Mahakalyanaka Ghrit; was done with purpose of correcting HPO - axis. *Chandraprabha Vati* is advised as an ovarian tonic (Rasayan Karma). *Maha Kalyanaka*

Ghruta is advised 1. to maintain her Agni. 2. It is good for reduction of stress and thus Dopamin levels will be maintained and HPO –

axis will function well. *Eranda Bhrushta Haritaki Churna* for *Anulomana*.

PARAMETER	Before Treatment	After Treatment
TSH	6.544 unit (5 Jan 2024)	0.723 Unit (16 March 2024)
USG (Follicular Study)	Ovulation absent/ No dominant follicle seen	Ovulation in March, April & May
Conception	-	UPT positive & USG confirmed viable conception in june 2024
Table no. 2		

Table no. 3 Timeline

July 2022 to December 2022	Naturally tried for conception
January 2023 to March 2023	3 months OCP for menstrual irregularity (Consulted modern Gynaecologist)
April 2023 to June 2023	3 months tried naturally for conception as advised by modern Gynaecologist
July 2023, August 2023, September 2023	Ovulation induction done for 3 cycles
December 2023	Came at ITRA for consultation
January – February 2024	<i>Virechana Karma</i>
March – April 2024	<i>Basti Karma</i> (8days) f/b <i>Nasya Karma</i> (5 days)
April – May 2024	<i>Shamanaushadha</i>
June 2024	UPT Positive, USG confirmed viability of foetus

Patient's Name : [REDACTED]			
Referred by : Self			
Date : 05/01/2024 19:07			
Ref. No. : 0012404			
Age : 26 Years			
Sex : Female			
Thyroid Hormone Study			
Test Name	Result	Units	Biological Reference Interval
Serum T3 :	0.918	ng/ml	[0.83 - 2.00] 1st Trimester: 1.05-2.3 2nd Trimester: 1.29-2.62 3rd Trimester: 1.35-2.62
Serum T4 :	4.354	µg/dl	[5.13 - 14.1] 1st Trimester: 7.33-14.8 2nd Trimester: 7.93-16.1 3rd Trimester: 6.95-15.7
Serum TSH :	6.544	µU/ml	[0.27 - 4.2] 1st Trimester: 0.33-4.59 2nd Trimester: 0.35-4.1 3rd Trimester: 0.21-3.15

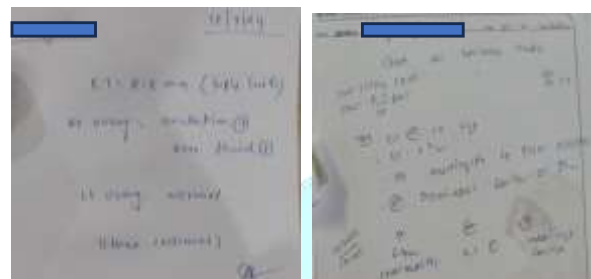
Patient Information		Sample Information	Client/Location Information
Name :	[REDACTED]	Lab Id : 032411281946	Client Name : Tara Bhatnagar
Sex/Age :	Female / 26 Y	Registration on : 16-Mar-2024 10:18	Location : Direct Collection
Ref. Id :		Collected at : not SAKPL	Approved on : 16-Mar-2024 20:00 Status: Pass
Ref. By :	Dr. SEEMA GOEL(BHAKPUR HOSPITAL)	Collected on : 16-Mar-2024 19:18	Printed On : 16-Mar-2024 20:01
		Sample Type : Serum	Process At : 112, Lab SAKPL, Gurgaon, Jharkhand
Thyroid Function Test			
Test	Result	Unit	Biological Ref. Interval
T3, total (Triiodothyronine)	0.84	ng/mL	0.88 - 1.59
T4, total (Thyroxine)	8.54	micro g/dL	4.87 - 11.72
TSH - Thyroid Stimulating Hormone	0.7232	µU/mL	0.35 - 4.94

Before treatment: Jan 2024

TSH: 6.544 Unit | T3: 0.918 | T4: 4.354

During Treatment: March 2024

TSH: 0.7232 | T3: 0.84 | T4: 8.54



Date: 06/06/2024



ANTE-NATAL RECORD					
O/H		HB		H/T Scan	
PAP/H		BDH	ABH	Double Marked	
LMP	6/1/24	GPST		Target Scan	
EDD	13/2/25	HbA2		Growth Scan / Doppler	
CEDD BY SCAN		HIV		TT	1"
R/H		Hb Variant		Voluntary	
HIGH RISK FACTOR		S. TSH		Influenza	
		URINE		Bioactive	
Date	WL	B.P	P/A	Remarks	
7/6/24	65	120/80	BH-GA 2170		
17/6/24	66	120/80	Single gsa 6w 2 70k 5.6		

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<https://doi.org/10.1016/j.dsx.2023.102876>

ⁱⁱ Poppe and Glinoer, 2003; Negro et al., 2006.

ⁱⁱⁱ Practice Committee of the American Society of Reproductive Medicine, 2015; Alexander et al., 2017; Poppe et al., 2021.

^{iv} Role of hypothyroidism and associated pathways in pregnancy and infertility: Clinical insights. Arun Koyyada and Prabhakar Orsu*

^v Prevalence of hypothyroidism in infertile women and evaluation of response of treatment for hypothyroidism on infertility. Indu Verma, Renuka Sood, Sunil Juneja, 1 and Satinder Kaur.

^{vi} Charak, Charak Samhita, Chikitsasthana, Chapter 15, Shloka 3,4, Reprint 2017, Chaukhamba Sanskrit Prakshan, Varanasi Acharya, Pg 550.