Ayurvedic Approach to Conquer Secondary Infertility with Hypothyroidism- A Case Report

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ABSTRACT
Infertility is a disease of the male or female reproductive system defined by the failure to conceive after 12 months or more of regular unprotected sexual intercourse. In Ayurveda infertility is termed as ‘Vandhyatwa’. The factor for a healthy conception, pregnancy and delivery is mentioned as “Garbha sambhava samagri” (factors essential for conception) by Acharya Sushruta. Artava (ovum) and Shukra (Sperm) are considered as “Antima dhatus”. Therefore uttarotara Dhatuposhana is essential for the good quality of Artava and Shukra. A 33-year-old female patient presented to the Streeroga OPD at ITRA on 1st Nov. 2021, complaining of Failure to conceive, Scanty menstruation, and weight gain for 3 years. In this case the patient had the history of Hypothyroidism and Low AMH, which affect the process of metabolism which further results in improper development of follicles and anovulatory cycle leading to infertility. In this case evidences of defective Dhatuparinama can be visualized like irregular menstrual cycles, thin endometrium and infertility. She has been taking allopathic medicine for the same for the 6 months which was later discontinued. Ayurveda treatment including Shodhana and Shamana therapy is adopted. Patient had undergone Virechana karma followed by Dashamooladi yogabasti and Shatapushpa Taila Matrabasti in next cycle, On 30th Apr 2022 patient came with amenorrhea of 1 month 6 days. The outcome of the Ayurvedic intervention was the conception and on 7th dec 2022 she delivered a healthy male baby of 3.2 kg.

Keywords: Hypothyroidism, Low AMH, Virechana, Basti, Secondary infertility, Vandhyatwa.

Introduction:
Thyroid disorders were found to be the most common endocrine problems seen in the world. In most of cases, thyroid can lead to infertility or miscarriages. It is estimated that 10-15% of married couples suffer from infertility. Secondary infertility indicates Previous pregnancy but failure to conceive subsequently. In Ayurveda infertility is termed as ‘Vandhyatwa’. Acharya Harita has mentioned 6 types of Vandhya, Amongst them one is the Kakavandhya (secondary infertility). According to Ayurvedic classics, the causes of Vandhyatwa are: Yonivyapada, Artavavaha strotodushti, Yoniarsa, Manasika Abhitapa (psychological abnormalities), Shukra Dosha, Asruga Dosha, Ahara-vihara Dosha (abnormalities of diet & mode of life), Akala Yoga (coitus in improper time), Balasamkshaya, Jataharini, Daivaprakopa. According to FIGO manual causes are: tubal and peritoneal factors (25-35%), ovulatory factors (30-40%), and endometriosis (1-10%). Prevalence of hypothyroidism in the reproductive age group ranges from 2% to 4%. Women with hypothyroidism may have either oligo- or amenorrhea. Any
impairment in thyroid hormone level causes impairment of foliculogenesis, which prevents the differentiation of granulosa cells and promotes apoptosis into atresia follicles, resulting in low AMH levels. Lincoln and associates (1999) found a 2% incidence of elevated thyroid-stimulating hormone (TSH) levels in 704 asymptomatic women seeking evaluation for infertility. Correction of hypothyroidism in those with ovarian dysfunction and elevated TSH levels lead to pregnancy in 64% of patients. vi In addition to infertility and miscarriages, previous studies observed that 20% of patient with low AMH (premature ovarian insufficiency) before the age of 40 years based on clinical and laboratory findings, tends to suffer from thyroid autoimmune disorder. AMH plays important role in the regulation of the development of the follicles. A patient with hypothyroidism, due to Agnimandhya there is improper formation of Utarottara Dhatu and Upadhatu which result in scanty menstruation or Irregular menses. Due to Dhatwagnimandhya Dhatuparinama is defective, which result in low level of AMH (diminished ovarian reserve) leads to defective folliculogenesis or Anovulation.

AIM AND OBJECTIVES:
1. To assess the efficacy of Ayurvedic medication in treating secondary infertility caused due to Hypothyroidism.

MATERIAL AND METHOD:
Case report: A 33-year-old married woman with a married life of 7 years visited the OPD of Prasuti tantra evam Stree roga of ITRA, Jamnagar with complaints of Failure to conceive, Scanty menstruation, and weight gain for 3 years and she had the history of Hypothyroidism and Low AMH.

History – k/c/o Hypothyroidism for 3 years (on medication thyronorm 25 mcg), No H/o DM and HTN.

Family history- No specific family history of infertility or any other disorder.

Personal history: After asking about routine lifestyle, it was found that the patient had the history of irregular dietary habits and she used to take fast food and followed a sedentary lifestyle. Had a habit of eating fast food 2-3 times in a week. Bowel habit was not regular with hard stool and occasional constipation. There was no problem with micturition. Patient had a habit of day sleep of about 1-2 hrs. in afternoon.

Menstrual history: (LMP: 02/11/2021) Patient had her menarche at the age of 13 years. She had a regular menstrual cycle with normal menstrual flow up to 20 years with an interval of 28-32 days and duration of 3-4 days for 3 years she had a complain of scanty menstruation with duration of 2 days. Bleeding was scanty with (1-2 pad/day-not fully soaked).

Obstetric history: G1P1AOL1- 3.5 yrs. old female child/ FTNVD.

ASTAVIDHA PARIKSHA:
Nadi: 70/min
Mutra: 5-6 times/day
Mala: Savibandha
Jihwa: Alipta
Shabda: Prakruta
Sparsha: Anushna Sheeta
Druka: Prakruta
Aakruti: Sthoola

DASHAVIDHA PARIKSHA:
Prakruti: Vata-kapha
Vikruti: Vata-kapha
Sara: Madhyama
Samhanana: Madhyama
Satmya: Sarwarasa Satmya
Satva: Madhyama
Aahara shakti: Madhyama
Vyayama shakti: Madhyama
Pramana: Madhyama
Vaya- Madhyama

General examination:
Built- Obese
Respiratory rate: 18/min
B.P: 118/82 mm Hg
Pulse rate: 70/ min
Height: 150 cm
Weight: 75 kg
BMI: 33.33 kg/m2
Pallor /Oedema/clubbing/cyanosis
/icterus/lymphadenopathy – absent
Tongue – uncoated

Systemic examination:
CVS: S₁S₂ heard, no murmurs
CNS: Well-oriented, conscious.
RS: Normal vesicular breathing, no added sounds

Gynecological Examination
Per vaginal:
Uterus: Anteverted- Antiflexion with normal size
Cervix: Firm, non-tender, healthy
bilateral fornixes were clear, no adnexal mass, non-tender.
Per speculum:
Cervix healthy, no discharge.
INVESTIGATION (07/12/2021)

Blood group: ‘O’ Positive
Hb%: 10.7 gm/dl
HIV: Non-Reactive
HBsAg: Negative
VDRL: Non-Reactive
FBS: 83 mg/dl

Urine examination:
Pus cells: 1-3/ hpf
Epithelial cells-occasional/ hpf
RBCs: Nil/ hpf

HSG EXAMINATION- B/L patent tubes. (Done outside before coming to the ITRA hospital)

Husband factor- Semen Analysis -2021
- Liquefaction within 20 minutes
- Fructose – positive
- Reaction – Alkaline
- Total sperm count- 60 mill/ml
- Motility- Act. Motile 70 %
  - Slg. Motile 10%
  - Non motile 20%
- Abnormal forms- 01%
- Pus cells -absent

Special investigation: (17/12/2021)
S.TSH: 5.71ul/ml
AMH: 0.25ng/ml
FSH: 5.16 mlu/ml
LH: 13.39 mlu/ml
PRL: 11.15ng/ml

USG finding: 08/11/2021
Ut: AV,
ET: 3.4 mm
Lt. ovary-old cyst present(34*34mm)

### Ovulation Study:

<table>
<thead>
<tr>
<th>Date</th>
<th>Day from LMP</th>
<th>Right ovary</th>
<th>Left ovary</th>
<th>Endomertium</th>
<th>Cervical mucus</th>
</tr>
</thead>
<tbody>
<tr>
<td>12/11/21</td>
<td>11</td>
<td>-</td>
<td>-</td>
<td>4.0mm</td>
<td></td>
</tr>
<tr>
<td>14/11/21</td>
<td>13</td>
<td>-</td>
<td>-</td>
<td>4.0mm</td>
<td></td>
</tr>
<tr>
<td>16/11/21</td>
<td>14</td>
<td>-</td>
<td>-</td>
<td>4.2mm</td>
<td>Old cyst present</td>
</tr>
<tr>
<td>10/1/22</td>
<td>12</td>
<td>-</td>
<td>-</td>
<td>6.2mm</td>
<td></td>
</tr>
<tr>
<td>12/1/22</td>
<td>14</td>
<td>10*10mm</td>
<td>-</td>
<td>6.4mm</td>
<td></td>
</tr>
<tr>
<td>14/1/22</td>
<td>16</td>
<td>10*12mm</td>
<td>-</td>
<td>6.6mm</td>
<td></td>
</tr>
</tbody>
</table>
THERAPEUTIC INTERVENTION: In this case, Shodhana and Shamana therapy was adopted as a line of treatment. She was firstly given Deepana, Pachana and underwent Shodhana i.e., Virechana on 18/11/2021(Table.1). Snehapana was done with Goghrita, and the total Vegas was 16. Samsarjana krama was advised as per Madhyama Shuddhi. Next from 07/01/2022 to 14/01/2022 she underwent Dashamooladi Yogabasti for 8 days (Table.2). Lastly, she underwent Shatabhujata Tama Matrabasti for 7 days. For Shamana therapy tab. Thyte (Table.3), Varunadi Kashaya and Kanchanara Guggulu were advised for 5 months, oral medicines were Stop during Shodhana Karma.

TREATMENT PROTOCOL:

Virechana Karma:(Table.1)

<table>
<thead>
<tr>
<th>Karma</th>
<th>Medicine name</th>
<th>Posology</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deepana-Pachana</td>
<td>Trikatu Choorna</td>
<td>3 gm, twice a day, Before meal with lukewarm water</td>
<td>5 days</td>
</tr>
<tr>
<td>Snehapana</td>
<td>Goghrita</td>
<td>1st day-30 ml 2nd day-60 ml 3rd day-90 ml 4th day-120 ml</td>
<td>4 days</td>
</tr>
<tr>
<td>Sarvanga Abhyanga-Swedana</td>
<td>Abhyanga with Bala taila  Swedana with Dashamoola Nadi Swedana</td>
<td>-</td>
<td>4 days</td>
</tr>
</tbody>
</table>
| Virechana Karma | Trivrutadi Yoga
(Trivruta, Danti, Triphala) | - | 1 day |
| Samsarjana krama | | | 5 days |

Dashamooladi Yogabasti Ingredients: Anubhuta Yoga (Table.2)

<table>
<thead>
<tr>
<th>Medicine</th>
<th>Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Makshika</td>
<td>60 ml</td>
</tr>
<tr>
<td>Lavana</td>
<td>12 gm</td>
</tr>
<tr>
<td>Sneha: Dashamoola Taila</td>
<td>60 ml</td>
</tr>
<tr>
<td>Kalka:Ajamoda Mishreya Vacha</td>
<td>30 gm (Each dravyas are in equal quantity (5 gm))</td>
</tr>
</tbody>
</table>
DISCUSSION:
Conception requires a complex sequence that includes ovulation, fertilization, transport of fertilized ovum into the uterus, and implantation into a receptive uterine cavity. In today's fast world due to lack of time, sedentary lifestyle, and increasing mental stress, Infertility is emerging as a disorder affecting the social and psychological aspects of life. Thyroid disorders are prevalent in reproductive-aged individuals and affect women four to five times more often than men. In women, oligomenorrhea and amenorrhea are frequent findings. Both thyroid disorders and decreased ovarian reserve increase with aging. Autoimmune thyroid disorders have also been reported in 10 to 30% of patients with ovarian failure, suggesting thyroid disorders are associated with ovarian reserve. Subclinical hypothyroidism may also be associated with ovarian dysfunction due to diminished ovarian reserve. In addition, subclinical hypothyroidism may also adversely affect pregnancy outcomes. Primarily patient was undergone Deepana, Pachana Chikitsa, Shodhana such as Virecha Karma. Deepana-Pachana plays major role in Amapachana and Agnidipti. Then Virechana Karma done for the Strotoshodhana Purpose. Doshas eliminated through Samshodhana Chikitsa are eradicated entirely (Apunarbhava), Virechana also has Raktraprasadana Karma. It normalizes the uterine &ovarian functions by its purifying action (Bio cleansing property). Once Shodhana was done, Basti Karma was planned. Dashamooladi Yogabasti given for the purpose of Garbhashayashodhana and Vatashamana. It also reduces chronic inflammation. Then Shatapushpa Taila Matrabasti is given which helps in Artavajanana, and Beejoutsanga. 

FOLLOW UP AND OUTCOMES:
Within 5 months of treatment, she got conceived in the month of April. Her LMP was 24/03/2022. she underwent USG on 29/04/22 and suggested that there is a single live intrauterine gestation, the yolk sac with fetal pole seen. she was underwent the regular check with medications such as Thyronorm(25 mcg), Phala Ghrita-2 tsp OD, and Iron-Calcium supplements. She delivered per vaginal healthy male baby of 3.2 kg on 7th dec.2022.

CONCLUSION:
The treatment of infertility is typically initiated only after a thorough investigation. The initial focus is to identify lifestyle or environmental issues that may contribute to or cause the reproductive impairment. In this study mainly Agni Vardhaka, Shothahara, Garbhashayashodhaka and Vata shamaka drugs are used. Normalizing Agni will help in Uttarothara Dhatu poshana and normalization of three Doshas especially

<table>
<thead>
<tr>
<th>DRUGS</th>
<th>LATIN NAME</th>
<th>RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yashtimadhu</td>
<td>Glycyrrhiza glabra)</td>
<td>1 part</td>
</tr>
<tr>
<td>Shuddha Sphatika</td>
<td>-</td>
<td>1 part</td>
</tr>
<tr>
<td>Pippali</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shatapushpa</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Madanaphala</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kwatha: Dashamoola Kwatha</td>
<td>250 ml</td>
<td></td>
</tr>
</tbody>
</table>

Tab. Thyter Ingridients: Anubhuta Yoga (Table.3)
Vata Dosha regulates menstrual flow with uterine vasculature and receptibility. Thus, we can conclude that infertility due to hypothyroidism is managed by using Shodhana and Shamana Chikitsa which has helped in conception. Following a healthy regimen along with a nourishing diet.

References: