Ayurveda management in Premature Ovarian Insufficiency- A Case Study

K. P. Vidya1* Divya U2 Sithara Satheesan2

1P.G. Scholar, 2Assistant Professor, Department of Prasutitantra and Streeroga, PNNM Ayurveda medical college and hospital, Cheruthuruthy, Trishur, Kerala, India

Abstract:
Premature ovarian insufficiency (POI) is defined as a cessation of ovarian function before the age of 40 years. It is associated with hypoestrogenism and loss of residual follicles, both of which lead to menstrual abnormalities, pregnancy failures, and decreased health-related quality of life. The prevalence of POI is estimated at 1% in the general population. The risk of premature ovarian insufficiency (POI) before the age of 40 years is 1%. The aetiopathology of premature ovarian insufficiency in the majority of cases is unknown and is termed as spontaneous or idiopathic POI. This is a case with signs and symptoms of POI which was developed after the administration of GnRH agonist drugs as a part of treatment of endometriosis. In this single case study, a female of 33 years having complaints of absence of periods since 6 months treated with Ayurveda treatment with pre and post evaluation. The symptoms of secondary amenorrhoea, hot flashes, vaginal dryness and mood swings were relieved after Ayurveda medications and procedures.

Key words: Premature Ovarian Insufficiency, Ayurveda, Artavakshaya, Yoni purana, Yonipichu

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CORRESPONDING AUTHOR:
Dr. K. P. Vidya
PG Scholar, Department of Prasutitantra and Streeroga, PNNM Ayurveda medical college and hospital, Cheruthuruthy, Trishur, Kerala, India
E-mail : vkpsambu@gmail.com
Introduction:
Premature ovarian insufficiency (POI) is defined as a cessation of ovarian function before the age of 40 years. The prevalence of POI is estimated at 1% in the general population.[1] The aetiopathology of premature ovarian insufficiency in the majority of cases is unknown and is termed as spontaneous or idiopathic POI. [2] Premature ovarian insufficiency is the preferred term for the condition that was previously referred to as premature menopause or premature ovarian failure; other terms used for this condition include primary ovarian failure and hypergonadotropic hypogonadism, as well as the misnomer, gonadal dysgenesis. [3-4] Genetic abnormalities, metabolic disorders, iatrogenic procedures and environmental factors can contribute to the development of POI. Cystectomy of endometriotic cysts is the leading cause for ovarian insufficiency, although any surgical procedure on the ovary may induce ovarian insufficiency. [5-6] Signs and symptoms of premature ovarian insufficiency are similar to those of menopause or estrogen deficiency. They include irregular/ absence of periods, hot flashes, vaginal dryness, dry eyes, irritability or difficulty in concentrating and decreased sexual desire. [7] These symptoms can also develop after the administration of GnRH agonists, as they produce pseudomenopausal state.

Case report:
A female patient of 33 years old attended the OPD of Prasuthi Tantra and Stree Roga, PNNM Ayurveda Medical College, Cheruthuruthy, with complaints of Amenorrhoea since 6 months associated with episodes of hot flashes and night sweats on and off, vaginal dryness, loss of libido, progressive weight gain and mood swings. Menstrual H/o: She attained menarche at the age of 11 years and had regular menstrual cycles thereafter. She developed menorrhagia and severe congestive dysmenorrhea after her second delivery. Since then she was diagnosed as a case of endometriosis associated with ovarian cyst at the age of 27 years.

Treatment and surgical H/o: She had undergone laparoscopic cystectomy twice and unilateral salpingectomy along with gross wedging of uterus due to severe adhesions over bladder and omentum. After the surgery, she was under GnRH agonist (leuproide acetate 3.75mg) drugs for 3 months. Thereafter she developed the above symptoms. There is no contributory family history.


Investigations:
USG abdomen pelvis: the findings are described in table 3. Among the criteria of POI, 2 factors (age<40years & amenorrhoea since 4 months) were satisfied in this case. As there is a recent history of GnRH agonist therapy that precipitates the disturbance in HPO axis, which in turn bring about fluctuations in the FSH level, hormonal assay was not done. The final diagnosis as Artavakshaya was made on the basis symptoms and investigations.

Therapeutic intervention:
Informed consent has been taken for publication in research community without disclosing the identity of the patient. A 2 phase treatment was planned in this particular case. The first phase treatment concentrated in correcting the remnant endometriotic tissue and also in relieving the
inflammation of the uterus and cervix. The second phase treatment was planned for the induction of periods and also in regulating the normal functioning of HPO axis (Table-1).

**Table-1: Therapeutic intervention:**

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. <em>Punarnavadkashayam</em> [10] 15ml kasayam+45ml leukwarm water at 11am &amp;3pm</td>
<td>2. <em>Kalyanakam kashayam</em> [17] 15ml kasayam+45ml leukwarm water at 11am &amp;3pm</td>
</tr>
<tr>
<td>4. <em>Mahatiktakam ghritam</em> [12] 1 teaspoon full with warm water in empty stomach in the morning</td>
<td></td>
</tr>
<tr>
<td>5. <em>Anutaila</em> [13] as pratimarsa nasyam 3 drops each in two nostrils</td>
<td></td>
</tr>
<tr>
<td>7. <em>Triphala churnam</em> [15] 1 teaspoon with warm water at bed time</td>
<td></td>
</tr>
</tbody>
</table>

**Sthanika chikitsa:**

1. *Yoni prakshalana* with *Triphala kashaya*
2. *Yoni purana* with *Durvadi ghritam*

**Table-2: BT and AT Observations:**

<table>
<thead>
<tr>
<th>Before treatment</th>
<th>After treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absence of periods</td>
<td>Regular periods</td>
</tr>
<tr>
<td>Hot flashes</td>
<td>No hot flashes</td>
</tr>
<tr>
<td>Sleep disturbances</td>
<td>Adequate sleep</td>
</tr>
<tr>
<td>Loss of libido</td>
<td>Sexually active</td>
</tr>
<tr>
<td>Dyspareunia and vaginal dryness</td>
<td>Relieved completely</td>
</tr>
<tr>
<td>Mentally depressed</td>
<td>Psychologically sound</td>
</tr>
<tr>
<td>Body weight: 75kg</td>
<td>Body weight: 75kg</td>
</tr>
<tr>
<td>USG Report before treatment (11.7.2020)</td>
<td>USG after 1 month of treatment (28.8.2020)</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>• Mild hepatomegaly with grade 1 fatty infiltration.</td>
<td>• Features of left sided hydrosalpinx with left endometriotic/haemorrhagic cyst</td>
</tr>
<tr>
<td>• Small cystic lesion in the left adnexa with a few thin septations</td>
<td>• ET: 7.5mm</td>
</tr>
<tr>
<td>• Tortuous cystic lesion with a few thin Septations in the left adnexa possibly hydrosalpinx.</td>
<td></td>
</tr>
<tr>
<td>• Evidence of surgery noted with distortion of the uterine contour.</td>
<td></td>
</tr>
<tr>
<td>• ET: 3mm</td>
<td></td>
</tr>
</tbody>
</table>

Table- 3: Comparison of USG reports before and after treatment:

**Fig-1: USG Before treatment**
Observations and results:
On the first day of evaluation, there was white discharge, bulky cervix and presence of nabothian cysts. After 7th day of 1st phase kshalana and purana, white discharge reduced the inflammation around cervix reduced and tenderness over Left. Fornix reduced. After 2nd phase of treatment, the cervix became normal in size, white discharge relieved. The patient got considerable symptomatic relief hence further investigations were not done. The mental status of the patient was assessed using HAM- A scale in which the score was 17 which showed mild anxiety levels.
Discussion:

GnRH agonists are synthetic derivatives of native decapetide produced by hypothalamus. These agents cause a reversible suppression of the production of FSH and LH from anterior pituitary. In a normal adult female, GnRH is secreted in a pulsatile fashion every 60-90 min, resulting in normal levels of FSH and LH. Because of increased long life and increased potency of GnRH agonists, there is down regulation of GnRH receptors resulting in densitization of GnRH gonadotrophs. This result in loss of stimulation of ovarian steroids thus results in hypoestrogenic state which causes amenorrhoea and perimenopausal symptoms. GnRH agonists are indispensable in the treatment of diseases like endometriosis, cancer etc. Usually there is a chance of recurrence of menstrual bleeding after the stoppage of these drugs. But in this particular case, patient did not attain periods even after 4-5 months of stoppage of GnRH agonist drugs. This may be due to the surgical intervention and anatomical distortion as a complication of endometriosis which is evident in the USG report too.

In the initial phase, Thrayanthyadi kashayam (mentioned in A.H vidradhi chikitsa) was given with an intention to regress the remnants of ectopic endometriotic tissue. As the patient exhibited symptoms of Vata and pitha Mahatiktakam ghritam (Mentioned in Sahasrayogam, Kushtadhikara) was given as it is Vata pitha samaka, Santapahara and Raktapitha pitha hara. It is also indicated in Pithaja unmadā and Shandatwa as per Susrutacharya. There were features of hydrosalpinx and haemorrhagic cyst in the USG scan. Hence Punarnavadi kashaya (mentioned in A H Sutrasthana) and Guggulu panchapala churnam (sahasrayogam) were added to the prescription. In Ayurveda, nasya karma is indicated in the diseases pertaining to Jara. Anutailam Nasyam (mentioned in A H, Sutrasthana) and Bala guduchyadi kera taila siro abhyangam (in Sahasrayogam) restores the normal functioning of HPO axis. Moreover Abhyangam acts as Jara nashana. Triphala churnam acts as antioxidant which reduces the free radicals in the body thus slows down the aging process.

Sthanika chikitsa like Yoni prakashalana with Triphala kashaya acts as Vrana sodhana and Ropana. Hence it is beneficial in infected cervical erosion and helps in minimizing the white discharge P/V. After attaining Vrana sudhi, Yoni purana was administered with Durva ghritam as Durva is indicated in Sudha vrana. In the second phase, the formulations which are Artava janaka were selected. Kulathadi kashaya and Moorchita tila taila are best examples for Artava janana. Kulathadi kashayam is Ashmarighna and helps in clearing the cysts. Kalyanakam kashayam helps in regulating the normal functioning of HPO axis. Yoni kshalanam with Dasamoolam kashayam was selected for Sthanika chikitsa considering the sothahara property of Dasamoola which helps in reducing the inflammation around the cervix. Yoni purana was done using Shatapushpa tailam. The drug Shatapushpa is given much importance in Kashyapa samhita. It is indicated in Artavakshaya & Artava ativridhi, Sushkayoni, Vandhya etc. In this particular case, Shatapushpa tailam has helped in relieving vaginal dryness and also in improving the endometrial thickness. The case of POI can be compared to as Artavakshaya in Ayurvedic perspectives. Hence Artavajanaka drugs can help in the samprapthi vighattana of this disease. As the patient had history of severe endometriosis and surgical and medical interventions related to it, the formulations which can regress the ectopic endometriotic tissue were selected in the initial phase. In the second phase, the prescription concentrated on induction of periods. Other symptomatic treatments were given along with.
Conclusion:
Hence this case was successfully managed by Ayurveda treatments and procedures in two phases without aggravating the ectopic endometriotic tissues. Ayurveda formulations helped in not only reducing the symptoms of menopause but also helps in destructing and preventing the further chances of development of ectopic endometriotic tissue.

Scope of the study:
GnRH agonists drugs are the most potent and proved drugs in treating the severe endometriosis. But there are certain side effects which adversely affects the hormonal status of the woman. Though they are capable of destructing the ectopic endometriotic tissue, the chances of recurrence of endometriosis is more after stopping them. Hence these drugs produce menopause like symptoms along with further chances of developing endometriosis after stopping them.

Limitation of study:
The hormonal status of the patient was not assessed in this study. As this is single case report the protocol should be tried in more samples for scientific validation of this procedure.

Consent of patient:
The consent of patient has been taken for publication and procedure without disclosing the identity of patient.

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