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Review Article

CRITICAL REVIEW OF *VANDHYATWA* W.S.R. ANOVULATION - LITERARY REVIEW

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ABSTRACT

Infertility is a condition which can be defined as inability to conceive with minimum one year of unprotected sexual life. There may be good number of reasons for this condition to cause. Inability of couples to fulfill their desire of continuing the family has been a social stigma since ages. Due to increasing publicity and awareness and also educational status of couple making them easy to seek help for the conception. The causes for this condition are problems in female and male reproductive system in structure and physiological function, psychology of couple, genetic, environmental, immunological and sometime unexplained causes also may account for this condition. *Vandyatwa* is a condition where a female fails to conceive and also unable to continue pregnancy and give a birth of a live baby and also unable to conceive in future. Ayurveda believes that the conception occurs only in *Shudha Yoni*.

Methodology: To review, analyse and interpret about female Infertility, its types, causes, Anovulation as one of the causes of infertility, its types, interpretation and Ayurvedic understanding of anovulation as a cause of *Vandyatwa*. The integral part of achieving *Sreyasi Praja* are *Garbhasambhava Samagri* which includes *Ritu, Kshetra, Ambu, Beeja*. As there are many causes for *Vandyatwa* mentioned, in this study *Vandyatwa* due to *Arthava Nasha* or *Nastartva* is considered where *Arthava* is taken as ovum. **Discussion**- Infertility is observed in approximately 10-15% of couples of reproductive age. Ovulation disorders account for about 30-40% of female infertility and about 20% of infertility couple. Anovulation is caused due to the defect in the function of hypothalamus -pituitary- ovarian axis. *Arthava* is considered as ovum and it is formed as a *Upadhatu* after the proper digestion of *Ahara Rasa* by *Prakrutha Agni*. If *Agni* is disturbed by *Ahita Ahara vihara* formation of *Rasadi Dhatu* there by *Arthava* is also affected causing *Nastartva* which can be considered as anovulation.

The condition *Nastartva* also can be managed by *Deepana pachana* and *Arthava Janaka* which is the line of management to correct the *Samprapti* and to restore fertility. Many *Yogas* are mentioned by our *Acharyas*, & *Pipplayadi Yoga* which contains *Trikatu* and *Nagakeshara* is one among them mentioned in *Bhaishajya Ratnavali Yonivyapath chikitsa* for *Vandyatwa*.

INTRODUCTION

Infertility is a condition in which even after having regular unprotected sexual intercourse for more than one year, the couple is unable to conceive. Infertility can be classified as **- Primary infertility**: females who never conceived in spite of regular unprotected coitus and Secondary.

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Infertility: Inability of female to get pregnant subsequently even after having previous successful conceptions. Among Healthy couples, some females get conceive within one menstrual cycle is defined as fecundability.

Incidence and Prevalence: There are increasing numbers of infertility cases since last decades. The fertility rate is getting deteriorated. According to data mention by WHO which explains there are as many as 60-80 million of couple are infertile in the world. Many couples unable to conceive even though not having any specific causative factor comes under unexplained infertility. With regular unprotected coitus some 80 percent of couples are able to conceive within one

year. Remaining couples may get conceive by the end of second year.

***Vandyatwa*:** *Vandyatwa* is a condition where the female is unable to conceive even after unprotected intercourse. In woman whom the *Garbhadhaarana marga* is blocked she is called as *Vandya*. The word *Vandhya* is derived from the root *"Vandh" + "Yak"*, which is meaning sterile, un-fruitful waste. The Classification of *Vandyatwa* has been mentioned in *Haritha Samhita, Rasa Ratna Sammuchaya* and *Vandhya Kalpa Druma*.

Acharya Charaka [1] **-** has mentioned in the aetiology the word -*Sapraja* In the clinical features of *Asruja Yonivyapath* the word - *Apraja.* [2] Under congenital abnormalities the word- *Vandhya.*

Harita Samhita: The classification of *Vandhya* is as follows- [3]

1. ***Kakavandhya*:** Women are unable to conceive again who has child from previous conception.
2. ***Anapatya*:** The woman who has never conceived.
3. ***Garbhasravi*:** The woman with repeated abortions. (Before third month)
4. ***Mritvatsa*:** The women who has conceived but unable to deliver live child.
5. ***Balakshaya*:** Infertility in malnourished women who doesn't have enough strength to sustain pregnancy (strength or auto immune disorder).
6. ***Balya/Dhatukshayaja*:** Infertility due to *Balaya avastha* or *Dhatukshayaja avastha.*

***Rasa Ratna Samuchchaya*:** Nine type of *Vandhya* have been described.[4] They are- *Adivandhya, Vataja, Pittaja, Kaphaja, Sannipataja, Bhutaja, Daivaja, Raktaja, Abhicharaja.*

Causes of Infertility

Table 1: Causes of Infertility with percentage

Causes	Percentage (%)
Male	35% of cases due to male factor includes sperm morphological abnormalities, motility, sperm count.
Ovulatory	40% of cases due to anovulation, luteal phases difficult.
Tubal	40% of cases due to tubal factors includes tubal scarring, defect in ciliary movements, tubal adhesion.
Other	10% of cases due to cervical causes uterine factors.
Unexplained	Remaining 10% includes under unexplained infertility.

***Vandhyatva Nidana*:** Before discussing the *Nidanas* of infertility, need to know the essential factors for conception. Abnormalities in these factors may lead to *Vandyatwa.* [5]

Acharya *Sushruta* has mentioned this under the heading of *Garbha sambhava samagri*.[6]

Ritu, Khestra, Ambu, Beeja are considered as the four essential factors for the conception. Along with these *Vaghbhatacharya* adds Unvitiated *Anila* and *Hridaya* as the essential factors for the birth of progeny with all desired qualities.

Causative Factors in Females [7]

Table 2: Cause of infertility in female

Ovulation dysfunction (30-40%)	Oligoovulation, Anovulation, Corpus luteum deficiency
Tubal abnormalities (25-35%)	Tubal block may be due to infection, pelvic adhesions etc.
Uterine abnormalities (10%)	Thin endometrium, endometritis, uterine fibroids, Synechiae, congenital abnormalities
Cervical factors (5%)	Cervicitis, cervical polyps, cervical erosion, cervical malignancy
Vaginal Factors	Vaginal atresia, vaginal septum, Narrow introits, Vaginitis and purulent discharge

Functional disarrangement of ovary is the major cause for infertility.

WHO classifies Ovarian dysfunction into seven main groups (who 1976)[8] Group 1: Complete absence of function of Hypothalamic –Pituitary axis? Group 2: partial dysfunction of Hypothalamic – pituitary axis. Group 3: Ovarian failure – loss of follicular activity. Group 4: Congenital or Acquired female reproductive tract abnormalities. Group 5: Pituitary tumours causes hyperprolactinaemia. It is coined as lesion in the Hypothalamus-pituitary region due to space occupancy. Group 6: Hyperprolactinaemia without any tumours is coined as a lesion in the Hypothalamus-pituitary region without any space occupancy. Group 7: Amenorrhea with an any tumour or mass is coined lesion in the Hypothalamo-pituitary region with space occupancy.

Ovarian steroidogenesis

The normal functioning ovary synthesizes and secretes the sex steroid hormones-estrogens, androgens and progesterone, in a precisely controlled pattern determined in part by the pituitary gonadotrophins, FHS and LH the most important secretory products of ovarian steroid biosynthesis are progesterone and estradiol however, the ovary also secretes quantities of estrone, androstenedione, testosterone, and 17-hydroxyprogesterone. Sex steroid hormones play an important role in the menstrual cycle by the preparing the uterus for implantation of the fertilized ovum. If implantation does not occur, ovarian steroidogenesis declines the endometrium degenerates and menstruation ensues.

Anovulation: Anovulation is a common cause for female infertility in today's generation. In anovulatory condition though their serum FSH concentration is normal, menstruation will be irregular and excessive as endometrium is proliferated under influence of oestrogen and there is no progesterone synthesis. The endometrium is shredded by sudden withdrawal of oestrogen and there is excessive and irregular shedding of endometrium. But their serum FSH concentration will be normal.[9] Anovulation means absence of ovulation. It is characterized as menstrual bleeding without preceding ovulation and followed by corpus luteum formation. Conditions essential for ovulation to occurs normally are – Hypothalamic pituitary ovarian axis must be intact with pulsatile secretion of GnRH. Ovarian hormones must have good response at their respective target organs. Positive and Negative feedback signals to be properly active. Any abnormalities in above factors results in anovulation.

Types of Anovulation

- **Primary Anovulation**: If a woman has never ovulated it is said to be primary anovulation.
- **Secondary Anovulation**: Suspension of ovulation secondary to some other illness is considered as secondary anovulation.

Pathophysiology of Anovulation

Follicular growth is independent till it attains the size of 2-5 mm. after that follicles are recruited by follicle stimulating hormone. During menstrual phase and even prior to it, due to absence of negative feedback of oestrogen, progesterone and inhibit, anterior pituitary secretes FSH. FSH is responsible for follicular growth, helps in maintaining follicular microenvironment oestrogen dominant rather than androgen, which is essential for continuous follicular growth and development into dominant follicle. Further FSH induces receptors for LH activity in granulosa cells which is needed for ovulation and luteinisation process. The factors responsible for ovulation are LH surge. Before this there is oestradiol surge which initiates ovulation. LH surge is essential for triggering of ovulation and follicular rupture about 36 hours after the surge. Other functions are disruption of cumulus oocyte complex, induction of the resumption of oocyte meiotic maturation and luteinisation of granulosa cells. Following ovulation there is formation of the corpus luteum, increasing concentration of progesterone slow down the frequency of the LH pulses. Luteal phase is constant in each menstrual cycle i.e. 14 days, during which FSH and LH levels are low. After luteal phase, corpus luteum gets degenerated, progesterone levels fall. Again, FSH increases to recruit follicles for next menstrual cycle. The coordination between the follicle and hypothalamic pituitary ovarian axis and all gonadotropins those are FSH, LH, gonadal steroids oestrogen inhibin is responsible for ovulation. This recycling mechanism is regulated by substance functioning as classic hormones (FSH, LH, oestradiol and inhibin) transmitting messages between the ovary and the hypothalamic-pituitary axis and autocrine/ paracrine factors, which co-ordinate sequential activities within the follicle designated to ovulate. Due to improper response to stimulus, improper function of IGF-2, inhibin and activin causes dysfunction of follicular receptor activity within the ovary.

Among *Garbhasambhava Samagri*, *Beeja* is considered as one of the important factors for achieving *Sreyasi praja*.

बीजं स्त्रीपुंसयोरार्तवशुक्रे । श्.शा.२/३३,दल्हन.रक्ते- स्त्रिरजसि, शुध्दे,। तथा, शुक्रे- पुंबीजे; शुद्धे। आ ह्. १/८ अरुनदत्त.

Here *Beeja* is considered as male and female gametes. In female *Artava* is essential for fertilization. **स्त्रीणां गर्भोपयोगी स्यादर्तवं सर्वसम्मतं।** Here *Artava* refers to *Stri beeja* (ovum). The type of *Ankura* depends on type of *Beeja*. **याद्रशं तूप्यते बीजं क्षेत्रे कालॊपपादिते । ताद्रग्रोहति ततस्मिन् बीजं स्वैव्यर्जितं गुणै:।** For achievement of conception healthy oocyte and spermatozoa are essential. **शुद्ध शुक्रार्तवं स्वस्थं सरक्तं मिथुनं मिथ:** (AH Sh.1/18 Arunadatta)

Importance *Beeja* in conception: In *Manusmriti* it is mentioned that the *Beeja* is more important than the *Kshetra* as the progeny will possesses. The qualities of *Beeja* embedded and not that of the field. The *Beeja* formed by the *Soumya bhava* of the *Rasa* gets *Agneyatwa* after undergoing *Dhatu paaka* by the influence of *Pitta*. **'आर्तवं आग्नेयं।'** Any abnormalities in *Beeja, Beejabhaga, Beejabhagaavayava* results in genetic abnormalities in the progeny, *Abeejatha* or anovulation may be one of such pathology which could be genetic inheritant. Under Twenty *Yonivyapath* all most all of the gynaecological diseases are included. if they are not treated properly cause infertility *(Abeejata)*.[10] Few of the *Yonivyapads* cause infertility either primary or secondary if not treated.

Table 3: *Yoni Vyapaths* Related to Anovulation

Yoni vyapat	**Interpretation**
Asruja Yonivyapath	A clinical condition with bleeding per vagina during early pregnancy leading to early pregnancy loss. This can be taken as secondary infertility due to implantation defect.
Vamini Yonivya Path	The feature of this *Yonivyapads* is the expulsion of *Beeja* or *Shukra* with *Arthava* from the *Garbhashaya Mukha* by sixth day or seventh days after the entry of *Shukra* into the *Yoni*. Here may be due to Luteal phase defect implantation failure leaving the female infertile.
Putragni Yonivyapad	This condition is repeated abortion due to *Arthava dosha*.
Shandi Yonivyapath	It is a congenital abnormal condition where the lady will not menstruate. This is due to *Beeja Dosha*. Over all in as the major *Dosha* involved in the pathogenesis of *Yonivyapath*, as *Upadrava* the vitiated yoni will not accept the *Beeja* and the female with such yoni becomes infertile.
Aticharana Yoni Yyapada	Acharya *Sushruta* says that this disease is caused by excessive coitus. The woman does not achieve conception. *Charaka* and *Vagbhatta* have described it to be *Vataja*, while *Sushruta* due to *Kaphaja*. In the initial stage, due to intense sexual desire, the woman may feel vaginal itching and due to repeated coitus may have excessive mucoid unctuous secretion from cervical and endometrial glands, which are the clinical features of *Kapha* as explained by *Sushruta*. *Bhavaprakasha* has explained that in this condition the woman discharges *Raja* before the ejaculation of male partner. It can be taken as vaginitis due to excessive coitus associated with infertility.

Cause for failure conception during these days: As the day's proceeds after the *Rutukaala*, the *Garbhashaya Mukha* becomes *Sankocha* and prevents the entry of *Shukra* just like the bloomed lotus closes as sun sets. Same way the sperm deposited after the ovulatory period will be fruitless as the cervix will be constricted during this period.

Time in relation to ovulation and conception: Ovulation occurs approximately after 16 to 24 hours of LH surge hence 12 to 16 days after *Arthava Chakra* is considered as fertile period the ovum can survive 72 hours after ovulation and sperm can survive for 72 hours in female genital tract. Hence, we can say that fertile period will be of 120 hours same way spermatogenesis takes 60 to 63 days to complete and capacitation of sperm happens in 2 to 6 hours after it reaches the ovum.

Various methods used to detect ovulation are grouped mainly as follows

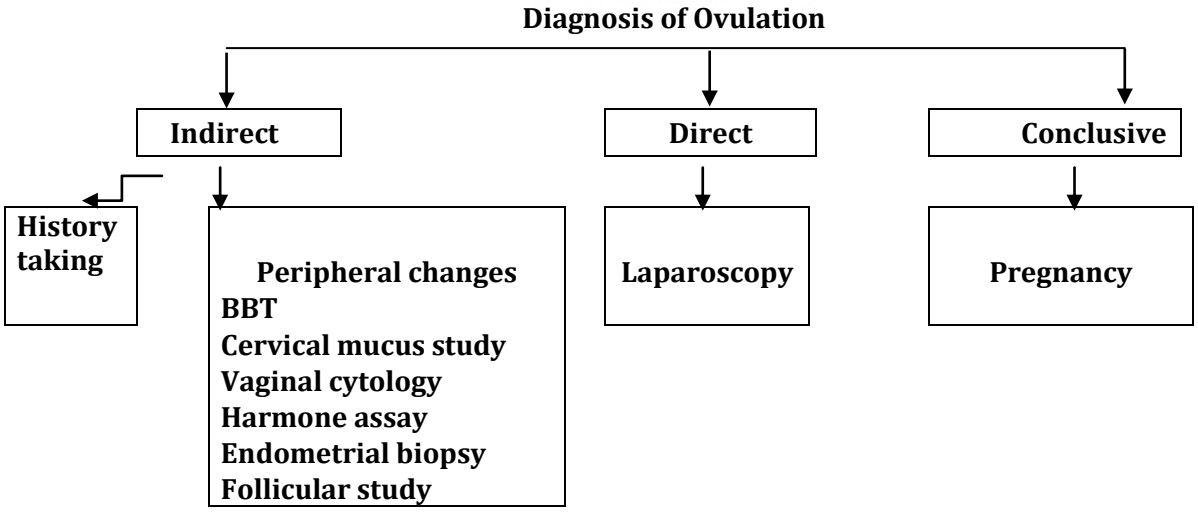

Figure 1: Diagnosis of Ovulation

The role of physician in management of infertility

One should do workouts of the infertility case with these goals.

1. Proper evaluation and correction of causes.
2. To provide proper information to couple
3. To provide emotional support

Counseling the Couple

The infertility management includes the patient assessment, counseling and management[11]. The steps start with

1. History
2. Inspection
3. Interrogation
4. Clinical examination – general and gynaecological
5. Investigation

Couple Instructions[12]

Assurance: The infertile couple remain psychologically disturbed right from the beginning, more so as the investigation progresses. The couple in such cases should be sensitively handled to minimize psychological upset. When minor defects are detected in both the husband and the wife, each of which individually cannot cause infertility but in combination, they significantly decrease the fertility potential. As such, the faults should be simultaneously treated and not one after the other. Even when a gross abnormality is detected and the prospect of pregnancy is bleak, an optimistic discussion is worth rewarding.

Body weight: Overweight or underweight of any partner should be treated, to obtain an optimum weight. Body mass index of 20–24 is optimum. **Smoking and alcohol:** Excess smoking or alcohol consumption has to be avoided.

Coital problems: The coital problems should be carefully evaluated by intelligent interrogation. Advice to have intercourse during the mid cycle too often gives the result even prior to investigation. Using LH test kit, one can detect LH surge in urine by getting a deep blue color of dipstick. The test should be performed everyday between day 12 and day 16 of a regular cycle. Timed intercourse over 24-36 hours after the color change reasonably succeeds in conception. Minor psychosexual problems should be dealt with accordingly.

Ovarian dysfunction is the most common indication for the ovulation induction. These agents can also be used in ovulatory women to increase the likelihood of pregnancy in couples with other causes of infertility or unexplained infertility. Use of these medications to promote follicular development and prompt ovulation is called super ovulation or ovulation enhancement. If these agents are administered solely to stimulate follicles, and egg harvesting is completed by ART, then the term controlled ovarian hyper stimulation is used. In contrast, we prefer the term ovulation induction to describe treatment with medications to stimulate normal ovulation in women with ovarian dysfunction. Frequent causes of ovarian dysfunction include PCOS and diminished ovarian reserve. Less often, central (hypothalamic or pituitary) disorders or thyroid dysfunction can result in infertility. Rarely, ovarian tumors or adrenal abnormalities lead to abnormal ovarian function. Treatment of ovarian dysfunction should be based on the identified cause as well as the results of any prior attempted therapy, the common drug used for induction of ovulation is Clomiphene Citrate.

***Nidana* for *Vandyatwa* due to *Abeejatha*-Anovulation:** We get scattered references available for Anovulation as *Beejopaghata, Pushpopaghata and Abeejatva*.

1.*Nastartva*: Due to *Aharaja* and *Viharaja Nidanas Vata* gets aggravated and causes "*Rasa Dhatu- Kshaya*" Because of this *Dhatu Kshaya*, which causes the *Kshaya* of its *Upadhatu Beeja rupi arthava* as well as *Masanumasika srava rupi arthava*. it means there will be anovulation and menstrual irregularity.

2. *Artavavaha Stroto Vighata*: [13] *Anuloma gati* of *Vata* is responsible for ovulation. Any trauma/injury to the varies or ovarian blood vessels causes vitiation of *Vata* followed by *Sangha* and *Upadhatu kshaya. Arthava Nasha* is caused by vitiated *Vata* and further causing *Arthava-Nasha.*

3. *Revati Jataharini (Pushpaghni)*:[14] According to *Acharya Kashyapa* the women with regular menstrual cycle are called as *Pushpangni*. But is without the *Beeja rupi pushpa*. Along with this the lady also will have *Lomasha ganda* and *Sthula*. The cause of initiation of this *Jataharini* is *Adharma* in indulging diet as well as life style along with psychological disturbances. This causes *Sanga* in the *Srotasa* that turns into *Vikriti* like anovulation. Therefore, it can be considered as a *Sanga Pradhana vikara*.

4.*Avarana*[15]: The *Prakupita Kapha* due to its *Nidana* does the *Avarana* of *Apana vata* leading to different pathogenesis like loss of function like *Artava nishkramana kriya* and also *Beeja rupi arthava Nirmana*.

5.*Vandhya Yoni Vyapada* [16]: According to *Sushruta arthava* can be considered as ovum and anovulatory cycles can be considered as *Vandhya yoni vyapat*. All *yoni vyapat* is caused dur to vitiation of *Vata.*

6.Use of *Tikshna Virechana in Mridukostha*: According to *Acharya Kashyapa*, if *Teekshna Virechana* is given in *Mridukostha* woman, *Vata* gets aggravated and causes *Beejopaghata*[17]. Due to vitiation of *Apana Vayu*, it prevents the rupture of ovarian follicle causing *Beejopaghata*.

7. *Beejadushti*: During *Garbhavastha,* if mother takes *Vata Prakupita Ahara* and practices *Vata Prakopa Vihara* and the female fetus is affected with vitiated *Vayu* then her *Beeja, Beejabhaga* and *Beejabhaga avayava* can be vitiated and can manifest congenital abnormalities in female reproductive organs. [18]

8. Dietetic Habit-Due to consumption of junk foods and following improper dietary habits the *Beeja* may get vitiated[19]. Following the abnormal dietary habits like *Vishamashana, Adhyashana, Anashana, Viruddha annapana* causes *Agnivaishamya* and *Rasadushti* leads

to *Artava Dushti* ends with *Beeja Rupi Artava Dushti* in the form of Anovulation.

***Purvarupa*:** There is no description of premonitory symptoms i.e., *Purvaroopa of Vandyatwa* in any of our classical textbooks by our *Acharyas*. *Acharya Kashyapa* has mentioned *Vandhya yoni* in the description of *Vataja-nanatmaja vyaadhi*.

***Rupa**: "Vandhya Nastartva vidyat".* A woman, in whom *Artava* has been destroyed, is termed as *Vandhya.* [20]

Probable *Samprapti*- Due to various *Aharaja, Viharaja* and *Manasika Nidanas, Agnimandya* is results by afflicting *Samana vata, Pachakagni* leading to *Kapha Dushti* in turn to *Ama*, thereby causing *Rasadushti*. Hence the formation of *Upadhatu Artava* effected leading to *Nastartva* causing *Vandya*. They can also be understood at other level that *Dhatvagni mandhya* in *Rasavaha Srotus* leading to *Artava dushti* leading to *Vandyatwa.*

Samprapti Ghatakas

Dosha: Vata Pradhana tridosha
Dushya: Rasa, Rakta, Artavava
Srotas: Rasavaha, Artavavavaha
Srotodushti: Sanga
Udbhavasthana: Amashaya, Pakvashaya
Sanchara sthana: Sarva shareera
Vyaktasthana: Phalasrotus
Rogamarga: Abhyantara
Sadhya sadhyata: Krichra Sadhya

Management of *Vandyatwa*

In classics *Acharyas* have described *Nidana* and *Chikitsa* for *Vandyatwa* at different contexts. The treatment has been given according to the causative factors. The *Vandyatwa chikitsa* includes- treating the underlying pathological condition of infertility, Avoiding the etiological factors (*Nidana parivarjana*), basic treatment methods of *Vandyatwa* by *Garbhaprada yogas*, following regimens indicated in *Garbhaadhana*

1) *Nidana Parivarjana-Samkshepataha kriyayogo nidanasya parivarjanam* (su.u.1/25)

Infertility is a condition caused by different etiological factors. Identifying those causes and strictly avoiding them is the first and foremost thing in the treatment.

2) Treating the Underlying Pathology-The pathology should be identified and treated accordingly

3) Treatment for *Arthava Dosha*[21]

a. *Panchakarma- Doshanusara vamanadi prayoga*
b. *Sthanika chikitsa- Kalka, Pichu, Yoni prakshalana*
c. *Shukradoshahara chikitsa- Rasayana, Vajeekarana, Mutra roga hara dravyas*

- **Treatment for *Yonivyapad*[22]** After proper *Purvakarma, Panchakarma chikitsa* should be given. As *Vata* is the prime cause for *Yonivyapath*, without *Vata* vitiation no *Yonirogas* will manifest, that should be controlled well. Application of *Lavana taila*, *Swedana* with *Pinda sweda* and *Kumbhika sweda, Parisheka* with *Sukhoshna jala, Vatahara ahara* and according to the condition after *Shodhana uttarabasti* can be administered.
- **Treatment of *Anartava* [23]** In a condition of *Artava nasha, Acharya kashyapa* mentioned use of *Shatavari – shatapushpa*. By use of this *Vandhya* or even *Shanda* can get a son.

4) Regimens Indicated in *Garbhadhana*

As *Purvasamyoga vidhi* some regimens are told, i.e., *Shodhana*, maintenance of *Sadvrutta*, avoiding negative emotions.[24] By proper purification and *Samskara yoni*, *Garbhashaya, Beeja* and *Manas* will remain unvitiated and are ensured leading to healthy pregnancy by perfect unification of *Beeja*.[25]

***Panchakarmas* In *Vandhyatva*[26]**

The infertile women should be prescribed *Vamana, Virechana* and *Asthapana bastis* by which she conceives.

1) ***Vamana*-**Given for *Kapha dosha nirhana*, *Vamana* does the *Soumya Dhatu Shamana* and ignites the *Agni dhatus* in the body which helps in *Pitta vrddhi* and intern increases the quantity and quality of *Arthava* in the *Stree*.
2) ***Virechana*-**Acc to *Kashyapa Samhita* for *Akarmanya Beeja* which is considered as anovulation, *Virechana* is considered as the best treatment.
3) ***Basti***

- *Niruha basti* is considered as *Amrutha* for an infertile woman.
- *Anuvasana basti* is an ideal treatment in *Beeja Dosha sambandhi Vandhyatva Yapana basti* is very ideal in *Stree vandhyatva*.
- In cases of *Beeja Dosha Vandyatwa*, like *Alpa dosha, Asta arthava* and *Nasta Beeja Anuvasana Vasti* is ideal.
- *Yapana basti* performs both the *Niruha basti* and *Anuvasana basti* which does both *Snehana* and *Shodhana karma*.

4) ***Nasya*:** The medications administered through the nasal route reaches the *Shiras* and helps in pulsatile action of Gonadotrophin releasing hormones and promotes the ovulation. Thus helping in treatment of infertility.

Ashwagandha siddha ksheerapaka every day in morning hours after *Rutu snana Lakshmana mula* uprooted in *Pushya nakshatra*, pounded with milk *Lakshmana kalka* with ghee or milk for *Nasya*.

Other *Yogas*[27]

Narayana Taila, Shatavari Taila, Phala Ghrita, Lasuna Ghrita, Shatavari Ghrita, Kalyanaka ghrita, Kushmanda avaleha.

Prajasthapana Gana-*Indri* (*Citrullus colocynthis*), *Brahmi* (*Bacopa monneiri*), *Shatavari* (*Cynodon dactylon*), *Sahasraparni* (*Cynodon* sp), *Amogh* (*Steriospermum suaveolens*), *Avyatha* (*Musa paradisica*), *Shiva* (*Terminalia chebula*), *Arishta* (*Picrorrhiza kurroa*), *Vatyapushpi* (*Sida cordifolia*), *Vishvasenakanta* (*Callicarpa macrophylla*) Ch.Su. 4/49. *Charaka* mentions *Prajasthapana gana.* These 10 drugs have the quality of attaining conception and combat infertility.

Pippalyadi Yoga: Physicochemical analysis and HPTLC of *Pippalyadi yoga* provides substantial information for the proper identification, authenticity, quality and purity of the final product/drug. On the basis of observations made and results of study, this study may be beneficial for future researchers and can be used as a reference standard in the further quality control researches.[28]

DISCUSSION

Infertility is a problem related to inability of conception due to various causes. Ovarian dysfunction is one among them. Anovulation is a condition which explains the failure of ovulation due to the dysfunction of hypothalamus-pituitary-ovarian axis. *Artava* is considered as *Stri Beeja* (ovum) as far as the conception is concern and *Nastartva*, the condition without *Artava* can be considered as anovulation. *Nastartava* is one type of *Artava vikara* the result of which is responsible for *Asambhava* of *Prajotpadana* i.e., *Vandyatwa*. Clinically anovulation is treated with different ovulation induction drugs. The side effects like ovarian hyper stimulation, early pregnancy loss, multiple pregnancies of conventionally practiced ovulation induction drugs necessitate the need of other alternate safe treatment with no side effects. For the management of *Vandyatwa* there are good numbers of formulations and treatment modalities mentioned in *Ayurvedic* classics and are well tested, tried and trusted. *Pippalyadi Yoga* is one such combination with *Trikatu* and *Nagakeshara churna* in equal quantity to be consumed with *Ghrita* mentioned in *Bhaishajya Ratnavali Stri rogadhikaara* in the treatment of *Vandyatwa*.

Infertility is observed in approximately 10-15% of couples of reproductive age (speroff et al1999). Ovulation disorders account for about 30-40% of female infertility and about 20% of infertility couple (Berna Gunea Suruhan et. al) Anovulation is caused due to the defect in the function of hypothalamus - pituitary- ovarian axis. *Artava* is considered as ovum and it is formed as a *Upadhatu* after the proper digestion of *Ahara rasa* by *Prakruta Agni*. If *Agni* is disturbed by *Ahita ahara vihara* formation of *Rasadi dhatu* there by *Artava* is also affected causing *Nastartava* which can be considered as anovulation. Different ovulation induction drugs are in clinical use to treat the anovulation.

CONCLUSION

The condition *Nastartava* also can be managed by *Deepana pachana* and *Artava Janaka* line of management to correct the *Samprapti* and to restore fertility.

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