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Vandhyatva (Infertility) due to anovulation: A review article

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Abstract

Infertility is defined as a failure to conceive within one or more years of regular unprotected coitus. Anovulatory factor is the commonest with incidence of 30%-40%. Infertility in Ayurveda might be co-related to *Vandhyatwa*. Ritu, Kshetra, Ambu and Beeja are the most important factors for the conception. Among these Beeja might be co-related with Ovum and impairment in formation and Nishakramana of ovum leads to anovulatory cycle. Ayurveda not only offers ample scope for effective treatment in infertility but improves overall physical and mental health also. So this study describes how anovulation leads to infertility, its etiopathogenesis, and its resolving factors and management.

Keywords: Infertility, anovulation, *Abijata*, *Vandhyatwa*

Introduction

Infertility is defined as a failure to conceive within one or more years of regular unprotected coitus. Couples who have never conceived denotes primary infertility, and if couples have previously conceived but fail to conceive subsequently indicates secondary infertility. In *Ayurveda*, *Acharyas* have explained *Garbha*, *Garbhadharan* and *Vandhyatwa* in a much-organised manner. Through *Garbhasambhav Samagri* i.e., *Ritu*, *Kshetra*, *Ambu* and *Bija* couple can achieve conception and if there are any abnormalities in corresponding part then it will lead to *Vandhyatwa* or post-natal defect in babies. Women who cannot conceive are called as *Vandhya*. Classification of *Vandhyatwa* has been mentioned in *Charak Samhita*, *Sushrut Samhita*, *Harita Samhita*, *Kashyap Samhita*, *Ashtang Sangraha*, *Madhav Nidan*, *Bhavprakash Rasa Ratna Sammurchaya*. *Bija*, *Artava* and *Pushpa* can be correlated with ovum which is one of the most important factors for conception and infertility. *Charaka* has given importance to psychological, emotional factors and mental health for *Garbhadharana*. Abnormalities of *Yoni*, *Manasika hetu*, defects in *Sukra* or *Artava*, *Ahita Ahara Sevana* and *Ahita Vihara* and coitus during improper time etc. causes infertility. Ayurveda not only offers ample scope for effective treatment in infertility but improves overall physical and mental health also.

As data shows anovulation is a one of the major causes of infertility WHO is classified anovulation in 4 groups on the basis of their origin.

Who Classification

WHO Group I: Anovulation due to Hypo-gonadotropic Hypo-gonadal (5-10%)

WHO Group II: Normo-gonadotropic Normo-oestrogenic this group is the largest, including 75-85% of anovulatory women.

WHO Group III: Anovulation due to Hyper-gonadotropic Anovulation The group accounts for approximately 10-20% of anovulatory women.

WHO Group IV: Anovulation due to Hyperprolactinemic Anovulation Approximately 5-10% of anovulatory women ^[1].

General concept of infertility and anovulation in ayurveda

There is no direct references of anovulation in *Samhitas* but we can correlate anovulation with *Alpapushpa*, *Nastapuspa*, *Yonivyapada*, *Dustaartava*, complications of *Shodhana*, *Dhatukshaya* etc. causes of these *Nastapuspa*, *Alpaartava* are mainly *Artavavaha shrotas*, *Rasavahshrotodusti*, *Agnimandyata*.

In *Vatalayonivyapada* [2], due to *Vata – Fenil, Tanu, Ruksha*, *Alpa Artava* leads to anovulation.

In *Pittalayonivyapada* [3], dominant *Dosha* is *Pitta* which leads to chronic PID which in turn leads to tubal block and tubo-ovarian mass leading to anovulation.

Shandiyonivyapad [4] is *Marutophat Beejdosa* which we can correlate with Turner's syndrome anovulation due to streak gonads and dyspareunia.

In *Raktajayonivyapad* [5], anovular bleeding causes excessive bleeding and anovulation.

Ashrikdosa [6]: *Asrik* being the *Beeja rupa Artava* its *Doshas* lead to *Abijatva* (Female factor including anovulation or oligo-ovulation)

In *Sushrutsamhita*, the *Vandhyatava* has been included in twenty *Yonivyapada* [7]. "He described characteristic features of *Vandhyatav* as "*Vandhyam Nastartavam Vidyat*". The word *Nastartava* may represent anovulatory menstrual cycle.

Kashya mentioned *Vandhyatava* as one of the eighty disorders of *vata* [8]. Under the description of *Jataharini Kashyapa* has mentioned *Puspagni* having absence of *pushpa* (absence of ovulation) [9].

Charaka directly quotes the *Vandhyatav* is a result of *Pradusha garbhashaya Bija Bhaga Dhushti* of female and male respectively [10]."

According to *Ashtangasanghrah* [11] *Vandhyatwa* occurs due to abnormality of "*Bija*" (abnormality in sperm, menstrual cycle, ovum).

Madhavnidan [12] mentioned *Vandhyatav* as *Nashtaartava* absence of *Artava* without pregnancy is known as *Vandhya*.

According to *Bhavaprakasha* [13], *Vandhya Yoni, Vatala Yoni Roga* these are produced by aggravation of *Vata*, and this *Vata* leads to *Abijta Nastaartava Alpahaartava*.

Acharyas have described Garbhasambhav Samagri (essential factors for conception)

1) *Rutu* 2) *Kshetra* 3) *Ambu* 4) *Bija*

Amongst the *Garbhasambhava Samagri*, *Beeja* is considered as one of the important factors for *Sreyashi Praja*. *Bija* which can be correlated with ovum is only responsible for the conception. *Bija Dushti* leads to *Abijata* (anovulation). A crucial element for conceptualization is *Shuddha Artava* as a form of *Bija*. The quality and quantity of *Shuddha Artava* fluctuates depending on the individuals, *Desha*, *Kala* and *prakriti*. The majority of female reproductive system diseases are caused by *Vata* vitiation [14].

Anovulation [15]

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 occur normally are Hypothalamus-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 should be properly active. Any abnormalities in these factors results in anovulation. There are 2 types of anovulation: primary and secondary Primary Anovulation is a condition where the woman has never ovulated and in Secondary Anovulation because of underlying condition Suspension of ovulation occurs.

Nidana for Vandhyatwa due to abijata/anovulation

1. *Ras Dhatu kshaya* -due to *Aharaj* and *Viharaj* *Nidans* like *Atimatra Akala Ahitha bhojana*, *Guru Sheeta Atisnigdhabhojan*, *Divaswapn*, *Atichinta*, *Achankraman*, *Vata* gets aggravated and causes *Rasdhatu Dusti* and this *Ras Dhatu Dusti* leads to *Ras Dhatu kshaya*, which causes the *kshaya* of its *Updhatu Beej rupi Aartva* as well as *Masanumasik Srava rupi Aartava*. it means there will be menstrual irregularity and anovulation.
2. *Aartavavaha shroto dusti* [16] any injury or trauma to the *Artavavah Srotas* will cause vitiation of *Vata* and disturbed the *Anulomana Gati* of *vata* which is responsible for *Aartavnasha* and anovulation.
3. *Aavarna* [17]- The *Prakupita Kapha*, as a result of its *Nidana*, causes the *Avarana* of the *Apana vata*, which results in many pathologies, including loss of function such *Artava Anishkramana kriya* and *Beeja rupi Arthava Nirmana*.
4. *Tikshna Virechana* Use in *Mridukostha*: As Per *Acharya Kashyapa*, if *Teekshna Virechana* is administered to a *Mridukostha* woman, *Vata* becomes increased and results in *Beejopagha* [18]
5. *Beejadushti*: During *Garbhavastha*, if the mother practises *Vata Prakopa Vihara* and engages in *Vata Prakupita Ahara*, and the female foetus is impacted by vitiated *Vayu*, her *Beeja*, *Beejabhaga*, and *Beejabhaga avayava* may be vitiated and may show congenital anomalies in female reproductive organs [19].
6. *Yonivyapad*: *acharya* mention different type *yonivyapad* ultimately leads to anovulation and infertility.
7. *Manasik nidana*: *atichinta*, *shoka*, *bhaya* also cause *Akarmanya bija*.
8. *Mandagni*: Due to consumption of junk foods and following improper dietary habits the *Beeja* may get vitiated. Following the abnormal dietary habits like *Vishamashana*, *Adhyashana*, *Anashana*, *Viruddha Annapana* causes *Agnivaishamy*, *Mandagni*, and *Rasadushti* leads *Artvadusti* and Anovulation.
9. *Veganigraham*: *Vegdharna* cause *Vata dusti* and *vata* is the main cause for anovulation and infertility.

Samprapti

Because of numerous *Aharaja*, *Viharaja*, and *Manasika Nidanas*, *Agnimandya* develops when *Samana Vata* is affected, *Pachakagni* causes *Kapha Dushti*, which then affects *Ama* and results in *Rasadushti*. This resulted in *Nastartva* causing *Vandya* and the development of *Upadhatu Artava*. At a deeper level, they can also be read to mean that *Dhatvagni Mandhya* in *Rasavaha Srotas* leads to *Artava Dushti*, which leads to *Vandyatwa*.

Samprapti ghatakas

Dosha: *Vata* (predominant), *Pitta* and *Kapha*

Dhatu: *Rasa*, *Rakta*

Upadhatu: *Artava*

Adhishthana: *Garbhashaya*

Srotas: Rasavaha Srotas, Artavavaha Srotas
Srotodusti: Sanga/Avarana/Abhighata

Treatment

- *Nidana parivarjan*
- *Agnideepan* and *Aampachan*
- *Shodhan: Panchakarma Vamana, Virecana, Asthapana* and *Anuvasana basti, Nasyakarma*. These are the methods of *shodhana* which removes *shrotorodha*, corrects the *Vata, Pitta* and *Kapha Doshas*. *Bhela* has emphasised that *Niruha Basti* is beneficial like *Amṛita* (nectar) in infertility.

Basti

Female reproductive organs found in *Katisthan*, the primary portion of *Apana Vayu*, are the most likely mode of action for *Basti* in infertility.

Apana Vayu is required for the proper creation of the *Artavachakra*, the ovum, and the *Garbhdharn Apana Vayu* is required for the proper creation of the *Artava-chakra*, the ovum, and the *Garbhdharna* [20]. *Basti* also plays an important role to relives *Strotavarodh* and uterine purification. *Basti chikitsa* also act by its *Prabhava* which increases *Aagni*. *Basti* normalized the *Apana Vata* through both local and systematic effect as anal area is considered as root of body.

- *Virechana* has direct effect on *Aagni*. As it improves the *dhatu poshana Karma* through *Dhatvagni*, it result into proper production of *Artava*. And *Shukra dhatu* also. It does the quality of *srotovishodhana*, so it will helps in destroying the diseases from its root rather than temporary relief. *Acharya Kashyapa* describes wonderful benefits of *Virechana* in infertility. And very precisely states that the effect of *virechana* enhances the structural and functional capability on reproductive system [21].
- In *Ashtangsanghrah*, It is explained that *Nasa* being a door way to *shira*, the drug administered through nostrils, reaches *shringataka* [22].
- *Naryan Taila nasya* plays important role in anovulatory cycle [23].
- *Naryana Taila Nasya* may stimulates olfactory nerve and limbic system which turns stimulates hypothalamus leading to stimulation of *GnRH* - regulating ovulation. - *Phytoestrogens* are plant derived substances whose chemical nature is similar to endogenous estrogen. They are beneficial in both hypo estrogenic and hyper estrogenic activity in human body. – As phytoestrogenic or esrogenic property of different components of *Naryana Taila, Shatavri Taila, Tila Taila, Shtpushpa Taila* may regulates neuropeptides activity, which in turn regulates the activity of gonadotropines secretion. Which in turns regulates ovarian cycle [24].
- Proper production of *Dhatu, Dhatu kshaya chikitsa - santarpan, brimhana, rasayana. Shukradosa hara cikitsa* is also indicated in the management of infertility.
- Diet and Modern life style management: According to *Ayurveda*, food affects the mind by influencing the three gunas of the mind: *Satvo, Rajo, and Tamo*. According to *Prakruti*, the concept of *Ahar* aids in the production of *dhatu*, which leads to the formation of *Shuddha Shukra* and *Artava*. *Ghee*, milk, dates, sesame seeds, pumpkin seeds, saffron, and honey may help

replenish and build *Ojas*. Fresh organic fruits and vegetables, whole grains, proteins from beans and peas, fruits like mango, plums, and pears, and spices like ajwain, cumin, and turmeric Black cumin may increase fertility.

- Stress Management: *Yoga, Pranayama, meditation* helps to manage stress.
- *Bijotpadaka cikitsa - Treatment of Alpa Puspa, Nasta Puspa, Nasta Bija, akarmanya Bija Artava Dosa hara cikitsa* is useful in anovulation.

Ekalausadhi Durva, Sivalingi, Putranjivi, Shatapushpa, Nagakeshara, Lakshmana and Shatavari are useful in female infertility.

Yogas Pushpdhanvarasa, Phala sarpi, Kalyanaka ghrita, Chitrakadi vati.

Conclusion

Anovulation is the major cause of infertility. According to involvement of *Dosha* we can select treatment for the patient. *Vandhyatva* due to ovarian factor (Anovulation) is *Vata-Kapha Pradhan*, Impairment of *Apana Vata* leads to *Artava Dushti* which in return results into *anartava* i.e., Anovulation or *Alpartava* or *Oligo ovulation*. *Vyana Vata* is responsible for maturation and rupture of graffian follicle. Due to *Dusti of Vyana vayu* improper maturation of follicles occurs and this will lead to anovulation. *Samanavata, Pachakpitta* and *Kledakkapha, Rasdhatu Dushti* and *Mandagni* leads to *Ama* formation and *Shrotorodh* and this all leads to anovulation.

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