

CONCEPT OF OVULATION IN AYURVEDA

Review article

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Abstract

Ovulation is the release of a mature egg (ovum) from the ovarian follicle. In each menstrual cycle, several ovarian follicles begin to mature and develop under the influence of pituitary hormones. *Ayurveda* also gives emphasis up on ovulation and considers ovum as one of the essential factor of conception. Aims and objectives- 1) To search and find out the references in relation to Ovulation in Ayurveda. 2) To understand the concept of Ovulation in Ayurveda. Methods:- Ancient Ayurvedic classics were consulted and compiled references out of them for said subject to elaborate as well as to understand the process of Ovulation in Ayurveda. Important observations:- Scattered references are available in Ayurvedic texts regarding ovum and ovulation. Results:- In Ayurvedic texts Ovulation process is elaborated nicely It can be concluded that Vayu(air), Karma(deeds) and Swabhava(nature) are responsible for folliculogenesis as well as ovulation according to the Ayurvedic approach.

Key words: Ovulation, Ovum, *Beeja*, *Artavavaha srotas* Conception, *Ritukala*.

Introduction:

Ovulation(1) is the phase of a female's menstrual cycle in which a mature egg is released from the ovarian follicles into the oviduct and is available to be fertilized.. The process of ovulation is controlled by Hypothalamic pituitary Ovarian Axis as per the modern medicine. In Ayurveda it is mentioned that which gives birth to another object by removing its covering or secrecy is called *Beeja(Seed)*. *Beeja(Seed)* has capability to produce another thing.(2,3). While describing essential factors for conception, it is quoted that *Beeja* is one of the four essential factors of conception contributed by mother and father. However no any clear description is found at one place/text

in this regard is available and very little literary work has been carried out of this subject hence with following aims and objectives this effort has been carried out to understand Ovulation in Ayurveda.

Aims and objectives-

- 1) To search and find out the references in relation to Ovulation in Ayurveda.
- 2) To understand the concept of Ovulation in Ayurveda.

Materials And Methods:

The Literary material related to ovulation has been collected from Several Ayurvedic texts *Charaka samhita*, *Sushruta samhita*, *Ashtang Sangraham*, *Ashtanga Hridayam*, *Kashyapa Samhita* and critically reviewed.

Discussion:

In classics, different terms are used to denote the ovum/*Beeja* such as, *Asrika*, *Shonita*, *Artava*, *Raja*, *Antahpushpa*, *Rakta*, *Lohita* etc. The word *Artava* is used

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to represent ovum at number of places in relation to fertilization, zygote, embryo and foetus i.e. *Vata* divides the combination of *Shukra*(sperm) and *Artava* (Ovum). *Shukra*(sperm) after entering the uterus through appropriate passage gets admixed with *Artava* (ovum) (4,5,6,7,8). The word *Shonita* is used to denote ovum in various places in relation to fertilization, zygote, embryo and foetus. Union of *Shukra*(sperm) & *Shonita*(Ovum) at appropriate age in male & female respectively responsible for conception. Here *Shonita* represents ovum.(9,10,11,12,13,14,15) The word *Asrika* is quoted as abnormality of *Asrika* as a cause of teratological abnormality in fetus so as to “asrik” refers to ovum. (16,17,18,19) Vitiating of Rakta, obstruction or compression of Rakta, enveloping of *Shukra* by Rakta etc. references pertaining to fertilization or zygote, refer to the use of word Rakta for ovum.(20,21,22,23). *Kashyapa* has mentioned *Antahpushpa* for ovum.(24) (Ka. Khi. 9/17) The word *Raja* for ovum is also quoted at certain references i.e. mother, father, *Raja*, *Shukra* as a source of *Mahabhutas* (five elements) in fertilization(19).

Acharya Sushruta has mentioned about the ovary, when he has described on the subject of *Viddha lakshana* of *Artava Vaha Srotas* (Symptoms of trauma to reproductive system). Any abnormality or trauma to the *Artavavahasrotas*(Reproductive system) may result in *Vandhyatva* (*Infertility*), *Maithunasahatva*(*Dyspareunia*) and *Artavanasha*(*Amenorrhoea*)(25). These symptoms chiefly *Artavanasha*(*Amenorrhoea*) and *Vandhyatva*(*Infertility*) relate with the functions of ovaries. In the chapter dealing with the treatment of *Ashmari*(*Stone*), *Sushruta* has restricted to avoid injury to eight vital parts. Among them “*srotasi phalayo*” means two *Phala Srotasa*(channels) indicating ovaries.(26).

Acharya Dalhana and *Bhavamishra* have described the word "*Phalamantargatam*" as the *Garbhashaya*(Uterus) but *Acharya Gananathasena* has mentioned in "*Sangnapanchaka*" as the ovary in the description of *Peshi*(muscles), in *Sushruta Sharira*. *Sushruta* had described while talking about *peshis*, that as there are *peshis* surrounding testis, in a male, just in the same way, there are *peshis* surrounding ovary which is called as “*Antahphala*” (27,28). *Acharya Sushruta* contraindicates *Ksharakarma*(medicated cautery) in *Udavruta Phalayoni* (upward displaced ovary) and *Apavruta Phalayoni*(downward displaced ovary) in the chapter of *Ksharakarma*(application of caustic alkaline paste). *Dalhana* in *Nibandha Sangraha* has commented that *Udavrutaphalayoni* as “*sthanat urdhvagatand*” and *Apavrutaphala yoni* as “*sthanat srastand*”.(29) The word “*Anda*” directly refers to ovary. These references illustrate the direct description about ovary as well as *Beeja Granthi*, *Phala*, *Antargataphala* as synonyms of the ovary. Expulsion of matured ovum from the *Beejagranthi* /ovary is known as *Beejotsarga*(ovulation).

Ovulation(*beejotsarga*) in relation to *vata* and *karma swabhava*

An ancient medical science – *Ayurveda* says that each and every function of body is determined by *Vayu*(*Vata dosha*). It controls all physiological processes which occur in body. This is the reason behind the quotation of *Acharya Charaka* who says “*Yantra tantra dharah vayu*” in *Vatakalakaliya Adhyaya*.(30) When it is in its normal state; it supports (*Dharana*) and nourishes (*Poshana*) the body but vitiated *Vata* produces many abnormalities in body, when follicle is in *Pushpibhuta* stage(in the stage of maturation) & its *Pravartana*(Release) occurs every month(31).

The first most important function of *Vayu* is *vibhajan* (division). "*Vayurvibhajati*" By this activity it develops the structure of foetus during antenatal period. Moreover it yields sperm and ovum for offspring. Ovum is prepared in ovary by cell division. This function of cell division is completed by *Vata*. The second most important function of *Vata* related with process is "*Pravartana*" (release, expel). Because of this kind of action ovum escapes from the ovary and ovulation takes place. The whole activity is known as 'dhatu vyuhakara' – the third main function of *Vata*. This process of *Pravartana* (release) is governed by *Apana Vayu* (Downward moving *vayu*) as mentioned by *Acharyas* in the *Prakrita Karma* (normal functions) of *Apana Vata* (Downward moving *vayu*) (32). The second responsible factor for cell division is '*Karma* (deeds) and *Swabhava* (nature)' in the view of *Charaka*. On this factor *Chakrapani* commented that not only *Vayu* but *Karma* (deeds) and *Swabhava* equally play an important role in cell division. Because *Karma* and *Swabhava* (nature) controls the action of *Vayu* otherwise; *Vayu* alone would either constantly create things or constantly cause destruction of the things. (33) Thus, *Vayu* when properly regulated by the *Karma* and *Swabhava* it works in a balanced state which causes normal physiological function.

Beeja Nirmana (Formation of Seed) **(34,35,36):-**

Ahara (Diet) is the most important entity for survival. The *Ahara* (Diet), composition of *Panchamahabhuta* (five elements), acts upon by *Jatharagni* (digestive fire), *Bhutagni* (five *Agni* from five basic elements) and *Dhatvagni* (fire of seven element tissues of the body) and the resultant nutritious material is made available up to cellular level. In this course, *Ayurvedic* texts mention the formation of *Dhatu* (tissues),

Upadhatus (secondary tissues), *Malas* ('Waste Products' of the body), and *Doshas* etc. The formation of the factor responsible for *Garbhadharana* (conception) occurs from *Rasadhatu* (primary nourishing waters of the body). The *Ahara* (Diet) *Rasa* derived from the consumed *Ahara* (Diet) by *Jatharagni* (digestive fire)'s action is subjected to *Rasa Dhatvagni* to produce *Artava* (Menstrual blood and/ovum). The *Karma* of *Rasadhatu* is *Prinana* (nourish). As the incidence of description of *Stanya* (breast milk) and *Artava* (menstrual blood and/ovum) as the *Upadhātu* (secondary tissue) of *Rasadhatu* is prevailing, this *Prinana* (nourishment) refers to their *Updhatus* (secondary tissues) also. As this *Rasa Dhatu* goes on decreasing qualitatively & quantitatively with age, it occur same with *Upadhātu*. We find the absence of *Artava* (menstrual blood and/ovum) and *Stanya* (breast milk) in the old female (37). Though the function of *Rasadhatu* is vividly available throughout the body it shows specificity in this function varying with the specificity of the *Srotasa* (channels) to which it is exposed. In the same context; the very scientific explanation of physiology of *Beeja Nirmana* (formation of seed) is given by *Vishvamitra* in *Sushruta Sutra* 14/14, *Chakrapani* Commentary. He has explained that *Rakta* (the form achieved by the *Rasa* after entering into the particular concerned *Srotasa*) enters into the minute channels which are carrying blood and seed – ovum (*Sukshma Kasha Pratikasha Beeja Raktavaha Shira*) attaining the particular nuclear form which has the capacity to form *Beeja* (seed-ovum). In the same context *Sushruta* described that the *Rasa* which attains *Raktatva* - through innumerable *Dhamanis* (blood vessels), gets *Upachita* (nourished) to reach the form of *Artava* (menstrual blood and/ovum). *Acharya Vagbhatta* describes the whole procedure with the same terminology (38). Here, *Acharya Kashyapa*

only differs in the terminologies but has quoted the same things indicating a common gist. He has mentioned that the *Garbha*(zygote) forming entity is exposed to the *Rajovaha Shiras*(channels carrying menstrual blood and ovum) where the *Rajaha Pravisarjana* occurs. This then takes the form of *Pushpa* (i.e. becomes the seed.)(39,40,41). The presence of this *Artava* (menstrual blood and/ovum)is there in the body of the female since the foetal stage but it is in the *Avyakta* (not manifested) form *Sushruta* in this context says that this *Raja* becomes *Upachita*(get nourishment) slowly and steady, simultaneously causing maturation and growth of *Stana*(breast), *Garbhashaya*(Uterus), *Yoni*(vagina) etc. A beautiful comparison between the unopened flower bud which has fragrance in its core but because of its undeveloped condition it is not evident. So it is the case with *Bala*(girl) also which attains maturity with *Kala*(time). The scientific reason given by *Kashyapa* in the same context is that as long as not all the *Dhatus*(tissues) of a female body are completed with nutrition they do not divert themselves to the *Yoni*. Hence this maturity is achieved only after all the *Dhatus*(tissues) are *Paripurna*(matured). Thus, we can summarize the events giving the cause of expression of physical maturity characters as *Vaya Parinamata*(Due to the actions of Vayu) and *Kalasapekshata*(As per the time). Time of Ovulation during reproductive years of a life is mentioned as *Ritukala*(Fertile period) the appropriate period for *Beejotsarga*(Ovulation) and also for *Garbhadhana*(Conception). *Ritukala*(Fertile period) is defined as period most suitable for achievement of conception. The *Ritukala*(Fertile period) in which, the seeds deposited are likely to bear fruits. This directly refers to the period of ovulation wherein the chances of conception are most. *Acharya Kashyapa* has explained *Rutu Kala* as the *Beeja Kala*(Period of Ovulation) (42,43,44,45).

Conclusion:

In Ayurvedic texts Ovulation process is elaborated nicely It can be concluded that Vayu(Vata dosha), Karma(deeds) and Swabhava(nature) are responsible for folliculogenesis as well as ovulation according to the Ayurvedic approach.

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