WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.084
Volume 11, Issue 1, 316-328. Review Article ISSN 2277–7105

THE IMPORTANCE OF KSHETRA OF GARBHAUTPADAKSAMUGRI IN INFERTILITY

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Article Received on
24 Oct. 2021,

Revised on 14 Nov. 2021,
Accepted on 05 Dec. 2021

DOI: 10.20959/wjpr20221-22550

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ABSTRACT

*Acharya*s have told about importance of *Garbha sambhav samugri which include Ritu(Fertile period of woman), Kshetra(Garbhashaya and Yoni), Ambu(Nutrition), Beeja(Sperm and ovum)* in infertility. Garbha sambhav samugri are essential to provide optimum health to mother and baby and to bring healthy offspring and in interest of future generation for benefit of society and nation and to maintain the health in the affluent society and to improve health in developing countries. *Kshetra* refers to the area needed for conception and for the healthy growth of the fetus which is considered as garbhashaya (uterus) and yoni (vagina) in the female. The importance of kshetra lies in the fact that if there is any abnormality in this then the process of fertilization, conception, implantation and growth of the fetus is impossible. The couple with progeny is considered auspicious, famous, lucky and complete and they are considered like a tree with many branches, flowers and fruits and are considered useful to the society. Where as the couple without progeny is like a tree which has only one branch and is not capable of giving shade to others. Though all the four factors i.e. *ritu kshetra, ambu, beeja* are important for conception but here in this particular article I will only deal with the importance of kshetra of garbha utpatti samugri in infertility. The study will help to know the normal and abnormal feature of *Kshetra* and also help to know the cause of infertility due to abnormality in the areas related to kshetra.

INTODUCTION

God has blessed women with the ultimate gift of being a mother. Infertilityis the main obstacle to be blessed with that. According to Ayurveda four factor *Ritu, Ambu, Kshetra* and *B*eeja[1] are responsible for conception. In this study we shall focus on one of the important factor

*'Kshetr*a', first and foremost requirement for healthy conception is the healthy uterus and vagina of mother.

Kshetra means fertile land, Ideal for the plant to grow. Through the seed is essential for the plant to grow. We cannot expect the seed to take the form of a plant anywhere and everywhere. An ideal and fertile land is needed forthis process to happen. Only if the seed is sown in a fertile land which is healthy the seeds breaks up into a beautiful plant or sapling. The rule is applicable for the formation of *Garbha* also. Here the land correlates to a disease free and healthy uterus the womb of the women or *Garbhashya.*

After implantation the uterus becomes home for the embryo and growing foetus until it gets matured enough to reach the term i.e. the period of delivery (being born). This according to *Ayurveda* is the *Kshetra* or *Garbha*. The future of the child after its birth depends on how well it was brought up and nourished in the mother's womb. Therefore from the *Garbha* perspective, Kshetra become very important. It is the first home for all livingbeings. Yoni or vagina of the female is also important for the purpose of conception because if the vagina is suffering from different diseases it can cause hindrance in the path of the sperm to reach its proper destination.in Ayurveda garbhashaya vikar and yoni vyapad has been mentioned in detail that are useful in dealing with the problem of infertility. Approximately 15% of the couples are infertile of this 15% male infertility accounts for approximately 20% of cases and female infertility accounts for up to 70% ofthese cases, largely due to very complex processes involved in female reproductive system.

REVIEW OF LITERATURE

Ayurvedic Review

Sushruta Samhita

According to Acharya Sushrut Garbhashaya is the 8th Ashaya found in females present between Pittashaya and Pakwashya(colon).[1]

Acharaya Sushruta illustrated the structure of Garbhashaya that, the yoni(gaenital tract)resembling in shape with the interior of conch shell has three folds in the third fold the Garbhashaya(uterus)is present. He furthersays that it resembles with the shape of the mouth of the Rohit matsya(fish).[2]

Vriddha Vagbhatta

Acharaya Vriddha Vagbhatta marked out the importance of pure yoni and Garbhashaya in origin of Garbha.[3]

Charak Samhita

Acharaya Charak denotes the importance of pure Beej and Kshetra and deformoties in them may cause deformities in Garbha.[4]

Bhavmishra

Acharaya Bhavmishra illustrated the structure of Garbhashaya that,the Yoni(genital tract)resembling in shape with the interior of conch shell has three folds in the third fold the Garbhashaya(uterus)is present, and as themouth of Rohit fish is shaped Garbhashaya also has the same shape.[5]

The term kshetra indicate the garbhashaya(uterus),but in broad scence the whole reproductive system can be said as kshetra. It includesthe following.

BHAGA

Dimensions: According to sushruta, bhaga measures 12 angulas vistara, 1 angula is approx. 1.89cm(0.75inches). This makes 22.68cm(9inches) approx.

Dalhana mentiones that Bhaga is nothing but yoni i.e. the measurement of vaginal introitus of women. According to him vistara is opening which leadsinto the vaginal opening.

The 12 angula measurement also seems to b description of entire vulva instead of introitus of vagina. Dalhana has mentioned that shape of vulva resembles leaf of banyan tree. Bhaga can be corelated to vulva.

Yoni

This term covers the the entire female reproductive system. It is one of thebahirmukha srotasa that excrets menstrual blood every month. Yoni can be corelated to vagina. yoni resembles shankh nabhi i.e. hollow portion of the interior of the conch shell. It has three *Avartas* i.e. circles within it. Uterus isattached to its third or innermost avarta.

Yonivyapad

Acharyas described 20 yoni roga. These are responsible for female infertility. The 20 yoni

vyapad are.

Vataja yoni roga

Pittaja yoni roga

Kaphaja yoni roga

Sannipataja yoni roga

Rakta yoni

Arajaska yoni vyapad

Acharna

Aticharna yoni vyapad

Prakcharna

Upapluta yoni vyapad

Paripluta yoni vyapad

Udavartani yoni vyapad

Karnini yoni vyapad

Putraghni yoni vyapad

Antarmukhi yoni vyapad

Shushka yoni vyapad

Vaminini yoni vyapad

Shandi

Maha yoni

When the reproductive system of a female is affected with these ailments she becomes incapable of retaining the semen as a result of which she is incapable of conceiving.

Garbhashaya

Garbhashaya means uterus. Garbha means fetus and ashaya means residence .garbhashya is one among the 8 ashaya and is found only inwomen.

SYNONYMS- Garbha shayya, Dhara (Bhava Prakash), Dimba (Vagbhatta).

Garbhashaya is located in between small and large intestines in the 3rd avarta of vagina. According to sushruta and vagbhatta it is located behindthe basti(urinary bladder). According to Kashyapa it is located amidst the coils of intestines and is covered with jarayu i.e. peritoneum.

The shape of garbhashaya resembles the shape of *rohit matsa mukha* i.e is mouth of rohit fish.

Garbhashaya is closely related to Guda marma and Vastimarma. Injury to these vital organs may also cause injury to uterus one of its ill effects could b infertility.

Modren Review[6]

Definion

The uterus is a hollow pyriform muscular organ situated in the pelvisbetween the bladder in front and Rectum behind.

Position and Angulation

Normally the long axis of uterus forms an angle of 90 degree with long axisof vagina. The forwad tilting of the uterus relative to vagina is call anteversion. The backward tilting of the uterus relative to vagina is retroversion. The uterus is also slightly flexed at the level of internal os thisis reffered to as antiflexion. The angle of anteflexion is 125 degree. The uterus usually inclines to the right(Dextrorotation)so that the cervix is directed to the left (levorotation) and comes relation with the left ureter.

Measurement and Parts

The uterus measure about 8cm long, 5cm wide at the fundus and its wallare about 1.25cm thick. Its weight varies from 50-80 gm. It has got the following parts.

1. Body or corpus 2.Isthmus 3.Cervix

CAVITY

The cavity of the uterine body is triangular on coronal section with the baseabove and the apex below. It measure about 3.5 cm. There is no cavity in the fundus. The cervical canal is fusiform and measure about 2.5 cm. Thus the normal length of the uterine cavity is usually 6.5-7 cm.

BODY OR CORPUS- The body is further divided into fundus, the part that lies above the opening of the uterine tubes. The body proper is triangular and lies between the opening of the tubes and the isthmus.

ISTHMUS-A constricted part measuring about 0.5cm situated between the body and the cervix.

CERVIX-Cylindrical in shape and measuring about 2.5 cm. It extends from the isthmus and ends at the external os which opens into the vagina. The part lying above the vagina is called

supravaginal part and the part lying inthe vagina is called the vaginal part.

STRUCTURE-Body consist of three layers from outside inwards parametrium myometrium and endometrium.

BLOOD SUPPLY-Arterial supply is from uterine arteries ovarion and vaginal arteries. **Venous channels** correspond to arterial course and drain into internal iliac veins.

CONGENITAL ANOMALIES OF UTERUS

Uterine anomalies are often associated with vaginal maldevelopment American fertility society(AFS)classification of mullerian anomalies(1988)are.

Class 1: Mullerian agenesis/Hypoplasia-segmental.

Class 2: Didelphys uterus.

Class 3: Bicornuate uterus.

Class 4: Septate uterus.

Class 5: Arcuate uterus.

Class 6: Diethyl stilboestrol{DES)related abnormality.

INCEDENCE OF MULLERIAN ABNORMALITIES-varies between 3-4%. The incidence is found to b high in women suffering from recurrent miscarriage or preterm deliveries(5-20%).

- Faliur of development of one or both mullerian ducts. The absence of both ducts leads to absence of uterus including oviducts. There is absence of vagina as well the absence of one duct leads to a unicornuate uterus with a single oviduct.
- Failure of recanalization of mullarian ducts
- Agenesis of the upper vagina of the cervix. This may lead to haematometra as the uterus is functioning.
- Failure of fusion of mullarian ducts.

Uncornuate Uterus-An uncornuate uterus means only partially developeduterus.

Didelphys Uterus-when there are two uterine bodies. Each having a cervix.

Bicrnuate Uterus-This condition deals with a heart shaped uterus with twohorns.

Septate Uterus-the two mullarian ducts are fused together but there is persistence of septum in between the two.

Arcuate Uterus-the corneal parts of the uterus remains separated.

Other abnormalities- adenosis, cockscomb cervix, adenocarcinoma cervix, cervical collar, uterus hypoplasia t-shaped cavity, cornual budding, abnormal fimbria.

Fallopian Tubes

The uterine tubes are paired structures measuring about 10cm and are situated in the medial three fourth of the upper free margin of the broad ligament. It has four parts medial to lateral intramural, isthmus, ampulla, infundibulum. Each tube has two openings one communicating with the lateral angle of the uterine cavity called uterine opening and measures 1mm in diameter. The other is on the lateral end of the tube called pelvic openingor abdominal ostium and measures about 2mm in diameter.

Abnormalities of the fallopian tubes

- Salpingitis
- Salpingitis isthmica nodosa
- Endosalpingosis
- Blocked fallopian tubes
- Isolated tubal torsion
- Paratubal cyst
- Absence or agenesis of one or both the tubes and other malformation

OVARY-ovaries are the pair of sex glands in females which are concerned with germ cell formation. Each gland is oval in shape and pinkish grey in colour and the surface is scarred during reproductive life.it measures about 3cm in length 2cm in breadth and 1c in thickness. Each ovary presents two ends tubal and uterine two borders anterior and posterior and two surfaces medial and lateral.

Abnormalities of the ovary

- Prolapse of the ovary
- Stein leventhal syndrome(PCOS)
- PCOD
- Carcinoma of the ovaries
- Absence of one or both ovaries
- ovatestis

Vagina

The vagina is a fibromuscular-membranous sheath communicating the uterine cavity with the exterior at the vulva. It constitutes the excretory channel for the uterine secretion and menstrual blood. It is the organ of copulation and forms the birth canal of parturition. The canal is directed upwards and backwards forming an angle of 45 degree with the horizontal in erect posture. The long axis of vagina almost lies parallel to the plane of the pelvic inlets and at right angles to that of the uterus. The diameter of the canal is about 2.5cm, being widest in the upper part and narrowest at its introitus. It has got enough power of distensibility as evident during child birth.

Congenital anomalies of the vagina.

- Transverse vaginal septum
- Vertical or complete vaginal septum
- vaginal agenesis
- vaginitis
- vaginal prolapse
- vaginal cancer

Congenital Anomalies of Cervix

- cervical agenesis
- cervical duplication

Congenital Anomalies of Hymen

- septate hymen
- microperforate hymen
- labial hypoplasia
- labial hypertrophy

Bandhyatva

Holi Bible

Data about stree bandhyatva has been mentioned in holy bible such as Shara, wife of Abraham suffered from infertility, Elizabeth wife of Jekhariah entitled barren, wife of Manoha suffered infertility and Hanna wife of Elkana suffered infertility and so on.[7]

Shrimad Bhagwat Gita

In dwarka the wife of a bhramin delivered nine still born babies. She was treated as bandhya. Arjuna had promised the bhramin couple that he would protect their children but he was unable to do so.[8]

Holy Khuran

There is also a description available about bandhyatva in khuran which says Jakaria said to Allah "O lord from when will I have a son as old age is making me weak and my wife is barren[9]". It means Jakaria's wife was barren and had no child, he feared that his wife is barren and now who would look after them and their work.[10]

Vedas

The vedas is one of the ancient source to provide information about infertility. In Rigveda there is a clear description about a krimi like durnama which destroys garbhashaya in females leading to infertility.

Yajurveda

Has mentioned about garbhadharana vidhi which clearly explains its importance to deal with correct measures to have a healthy progeny.

Atharvaveda

Atharvaveda has mentioned about many concepts related to female reproductive system such as description of yoni, beeja, virya, garbha and various other elements taking part in healthy conception along with female reproductive organs.[11] It has mentioned about many krimi like Vatsapa[11], Durnamain, Kranava which destroyes the fetus causing infertility in females. It also mentions herbs like Prishnaparni, shwet sarshapa to control the krimis and to treat bandhyatva accordingly. Herbs likeugragandha and sarshapa etc has been mentioned for the healthy growth ofthe fetus.

Charaka Samhita

Acharya Charaka has described that bandhyatva is caused by *Pradushtha GarbhashayaBija Bhaga* of shonita(abnormal bija of mother)and is one of the complication of untreated yoni vyapads.[12]

In *Mahati Garbhavakranti Sariradhikara* 4th chapter bandhya has been described as failure to achieve conception. While describing nidana of bandhyatva importance has been laid on *ritu*

kshetra ambu and beeja, normalcy of hridaya, proper functioning of vayu and shad bhava, abnormality of any one factor causes infertility.[13] Infertility is caused by congenital absence of uterus or artava. Chakrapani explains bandhya refers to incurable congenital or acquired abnormalities resulting into absolute sterility.[14]

Sushrut Samhita

Acharya sushruta has mentioned bandhya in *Vismati yoni vyapad*. Infertility has been included in the clinical features of injury to artavavaha srotasa.[15] He also included bandhyatva under vataja yoni vyapada of which the characteristic feature is *Bhandhyam Nastartavam vidyat*.

Ashtanga Sangraha

Acharya Vagbhata has mentioned that abnormalities of kshetra that is women suffering from yoni vyapada never conceive and untreated yoni vyapada ultimately result in bandhyatva.[16]

Bhavaprakasha

Bhavaprakasha followed Madhavakara. He also included bandhya among vataja yoni vyapad.[17] The characteristic feature is *Bandhayam Nashtartavam vidyat.* Bhavmishra denotes one of the cause of bandhyatva to be the semen falling on *the Samirna nadi.*

Madhava Nidana

Madhavkara included bandhya in *vismati yoni vyapads.*[18] Bandhyam nashtartavam –loss of artava withot pregnancy is bandhya.

INFERTILITY

Definition-Infertility is defined as failure to achieve pregnancy after 12 months or more of regular unprotected sexual intercourse and there is no other reason such as breast feeding or postpartum amenorrhea.

Primary Infertility- it is defined as the absence of a live birth for a women who desires a child and have been in a union for atleast 12 months during which they have not used any contraceptives. The world health organization also adds that women whose pregnancy spontaneously miscarries or whose pregnancy results in a still born child without ever having a live birth ever would present with primary infertility.

Secondary Infertility- defined as the absence of a live birth for women who desires a child

and have been in union foe atleast 12 months since their last live birth during which they did not use any contraceptives.

Female Infertility-in female the problem of infertility is more common because of the complex anatomy of the female reproductive system.

Infertility Rate- approximately 15% of couple are infertile of this 15% male infertility courts for approx. 20% of cases and female infertility courts for approx. 70% of these cases , which is largely due to very complex natureof female reproductive system.

Common Cause of Female Infertility Include

- ovulation problems 30-40% (polycystic ovarian syndrome, the most common reason in present era, anovulation or oligo ovulation, decrease ovarian researve, luteal phase defect, luteinized unrupturedfollicle.
- Tubal blockage and related diseases 25-35%.
- Pelvic inflammatory disease caused by infection like tuberculosis.
- Age related factors.
- Uterine problems 10%.
- Previous tubal ligation.
- Endometrioses 1-10%.
- Advanced maternal age.
- Immune infertility.
- Cervical factors 5%.

DISCUSSION

Yoni resembles the *Aavarta* (Spirals) of the *Shankha* (Conch shell) and having three *Aavarta*. The *Garbhashaya* lies in the third *Aavarta* in the *Yoni*.

Experts said that *Garbhashaya* is similar in shape and size of *Mukh*a (Mouth) of *Rohita Matsya* (Akind of fish) Which is narrow at the outerpart and broad in the inner part.

Conception of *Garbha* depends upon the healthy or disease free *Garbhashaya*. The power of implantation is lost, If any impairment occurs inthe G*arbhashaya*. Similarly twenty types of *Yoni vyapada (vataja, pittaja. kaphaja, sannipataja. Raktaja, Arajaska, Acharana, Aticharana, Prakcharana, Upapluta, paripluta, udavartini, karnini, putraghni, Antarmukhi,*

*Shushka, vamini, Shandi, Maha yoni roga)*also Interferes the conception.

Actually the whole reproductive system of female body should be considered as kshetra described in Garbha sambhav samugri instead of only uterus, because the genital system of female is the base of giving a healthy progeny. A single unhealthy uterus cant cause infertility. A unhealthy vagina, cervix, fallopian tubes, ovaries work in causing infertility as well sometimes all together and sometimes one single organ disease can be the cause. If vagina is suffering from any lypoma cyst or any other malformations it will not be able to transfer the sperm into the cervix. Cervical factors such as chronic cervicitis, immunological factors (presence of antisperm antibodies) can cause ineffective sperm penetration. Uterine factors such as chronic endometritis(TB), fibroid, synechiae uterus, congenital malformations can cause failure of implantation. Tubal factors such infections. blockage can cause resistance to the movement of sperm. Pelvic factors such as tubal and peritoneal adhesions, endometrioses can cause altered tubal mobility and lastly ovarian factors such disovulatory (pcos, anovulation, corpus luteum insufficiency), premature ovarian failure and resistant ovarian syndrome etc are creating hindrance in female fertility now a days. Infertility was also prevalent in old eras and very nicely explained by are acharyas but in modern era the rate of infertility is increasing day by day because of sedentary life style, food habits(junk food, oily food etc) late marriages, obesity, less physical work, environment, chemicals, pollution all these factors have created a pathology in female reproductive system causing this serious problem of infertility more and more aggressive worldwide.

CONCLUSION

Infertility has become a major health problem in current scenario. Since Incidence of Infertility are increasing day by day it has become a global problem. According to Ayurveda *Kshetra* is responsible factor of infertility and foetal anomalies. Many abnormalities of uterus like uterine septum, Bicornuate uterus, Unicornuate uterus, Didelphic uterus, T-shaped uterus, Cervical Insufficiency and fibroids are responsible for female infertility.

According to Ayurveda twenty *Yonivyapad* are also play a major role in infertility. So we can say that for conception and healthy progeny a healthy*Kshetra* is essential.

REFERENCES

1-2 Kaviraj ambikadutt shastri (sharir sthan :-2nd shukrashonit shuddhi, 3rd garbhav kranti sharir, sushrut samhita, 12th edition New Delhi, Chaukhamba publication 2001 page no.

11, 12, 15, 21.

3. Sharir sthan, Vagbhatta krita/Kaviraj Atridev Gupta. Das Academy, 2/3.
4. Agnivesha Charak Samhita with Ayurvedadeepika commentary by chakrapanidatta edition acharya YT Varanasi, choukhambha orientalia, 2011; 2/29.
5. Bhav prakash Hindi Sarvanga Sundar Vyakhya by Bhavmishra, edited by Pd. Lalchandra Vaidya, publication – Motilal Banarsi Das (1950), Delhi.
6. Shaws Textbook of gynaecology publication B.I. Churchill Livingstone Pvt. Ltd New Delhi. Developmental Anatomy L.B. Arey, 7th edition, Asia Publishing house. New York Human embryology Indrabir Singh, Mac millan India ltd. Madras.
7. Holy Bible(1 Sameul 1:2,6 and 11)
8. Srimad Bhagavata (2nd part dosama skandha arjuna pratjina).
9. Holy Khurana(sura 3(a1&jug) A-lay Imran section 4/38-40)S.
10. Holy Khuran(sura al Maryam-19(Al jug)16-section verse-6S.
11. Atharvaveda publication Sayanbhashya Rishi Kumar, P.R .Chandra Sharma, Sanatam Dharma Mantralaya(1982) Moradabad.5/25/10-13. Atharvaveda 8/6/6.
12. Agnivesha Charak Samhita with Ayurvedadeepika commentary by chakrapanidatta edition acharya YT Varanasi, choukhambha orientalia : - 2011, Chikitsa sthan 30/30.
13. Agnivesha Charak Samhita with Ayurvedadeepika commentary by chakrapanidatta edition acharya YT Varanasi, choukhambha orientalia : - 2011, Sharir sthana 4/30/31.
14. Agnivesha Charak Samhita with Ayurvedadeepika commentary by chakrapanidatta edition acharya YT Varanasi, choukhambha orientalia : - 2011, Sharir Sthana2/5 Chkrapani commentary.
15. Kaviraj ambikadutt shastri (sharir sthan :-2nd shukrashonit shuddhi, 3rd garbhav kranti sharir, sushrut samhita, 12th edition New Delhi, Chaukhamba publication 2001,sharir sthana, 9/12.
16. Sutra Sthan, Vagbhatta krita/Kaviraj Atridev Gupta. Das Academy, 38/53.
17. Bhav prakash Hindi Sarvanga Sundar Vyakhya by Bhavmishra, edited by Pd. Lalchandra Vaidya, publication – Motilal Banarsi Das (1950), Delhi Chikitsa sthana, 70/6.
18. Madhav Nidana, 63/3.