LUTEAL PHASE DEFECT - AN AYURVEDIC PERSPECTIVE

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Abstract

Ayurveda emphasizes on ‘shreyasi praja’ through a planned pregnancy. More than 70 million couples suffer from infertility worldwide. Luteal phase defect (LPD) has been diagnosed in 3-20% of females who are infertile and in 5-60% of females experiencing recurrent pregnancy loss and also in 6-10% of fertile women. There is inadequate endometrial maturation resulting from qualitative or quantitative disorder in corpus luteum function, and is a common cause of early pregnancy wastage. This is due to vikriti of kshetra. Vandhyatwa or Anapathyatha (infertility) has been explained in detail in Ayurveda classics. Putraghni, vamini yonivyapat can be viewed close to LPD. Adequate preconceptional care can improve pregnancy outcome in LPD. The importance of preconceptional care is highlighted in Ayurveda. The treatment aims to provide healthy conception, maintenance of pregnancy and for the delivery of a healthy progeny.

Keywords – Luteal phase defect, Infertility, Preconceptional Care.

INTRODUCTION

Reproduction is one of the basic requirements of any species to continue its existence in the universe. Ayurveda, the extract of all Vedas dreams about ‘shreyasi praja’ (a well formed foetus with physical, psychological, intellectual and spiritual endowment who can serve the self and the society). Infertility has become one of the most common medical disorders affecting married couples worldwide. Drastic changes in lifestyle, food habits, psychological stress etc. have added much towards the creation of this scenario. More than 70 million couples suffer from infertility worldwide, the majority of them from developing countries and the causes of it are varied. The prevalence of infertility is on a steep hike and there is a need for deeper analysis on the concepts of reproductive health, fertility and healthy conception. The concept of Vandhyatwa or Anapathyatha (infertility) has been explained in detail in our classics.

Garbhadana

Garbhadana (conception) is the first samskara. When both male and female after observing the advocated dietetic regimen and other mode of life perform coitus and ejaculates unvitiated sukra (sperm), passing through healthy yoni (vagina), reaching garbhasaya (uterus) and getting mixed with disease free sonitha...
(ovum), conception is definite. The food, environment and lifestyle can have profound effects on the well-being of couples and their future progeny.

Garbha is formed out of the combination of 6 factors; matrija bhava(maternal contributions), pitrija bhava(paternal contributions), atmaja bhava(consciousness), satmyaja bhava(wholesomeness), rasaja bhava(nutrients), satvaja bhava(faculty of mind).

Garbhhasambhava Samagri

Classics have emphasized on Garbhhasambhava samagri (factors required for conception). Susruta equating germination of a seed with achievement of conception says that if rithu(ovulation period), kshetra(uterus or endometrium), ambu(blood and intercellular fluid of endometrial tissues with required nutrients) and beeja(sperm and ovum) assemble together, conception will occur. Conception depends on the fertility potential of both the male and female partner.

LUTEAL PHASE DEFECT (LPD)

Luteal phase defect is still controversial, but is a distinct form of infertility due to early pregnancy wastage. Luteal phase defect (LPD) is a condition secondary to insufficient progesterone exposure and failure to maintain the normal secretory endometrium required for embryo implantation. Luteal phase defect (LPD) has been diagnosed in 3-20% of females who are infertile and in 5-60% of females experiencing recurrent pregnancy loss. Recurrent pregnancy loss (RPL) is defined as the sequence of two or more spontaneous abortions as documented by either sonography or on histopathology, before 20 weeks. The risk increases with each successive abortion reaching over 30% after three consecutive losses. Pregnancy loss due to LPD happens in the first trimester itself. LPD is considered to cause 28% of RPL. 6-10% of women who are fertile also demonstrate an inadequate luteal phase. LPD results from inadequate endometrial maturation, caused by the qualitative or quantitative disorder in corpus luteum function. This “defect” or “shortcoming” can be due to deficiencies in pre-ovulatory follicle, corpus luteum or endometrium. It is either due to low progesterone levels secreted by ovaries or due to less endometrial response to progesterone.

A “short luteal phase” is defined as an interval of less than or equal to 8 days from LH peak to the onset of menstrual flow. In a simple way LPD is a failure of the uterine lining for implantation of a fertilized egg to be in the right phase at the right time.

LPD might be better translated as a basic “shortcoming” during the menstrual cycle during the development of the endometrium. It is a condition that disrupts menstrual cycle, though there is a debate about whether it is a direct cause of infertility. There are several factors which can cause LPD. It may present as frequent periods, intermenstrual spotting, infertility or miscarriage.
LPD and pregnancy

Progesterone is a vital hormone needed for preserving the endometrium and maintenance of pregnancy during the first trimester. If progesterone level did not reach the optimal level during this period, LPD may occur. There may be inadequate progesterone receptors in the endometrium, or defects in the endometrium. Some of the culprits to low progesterone are:

1. Poor follicle production 2. Abnormal luteinisation 3. Endometrium failure 4. Abnormally low cholesterol levels and being underweight. 5. Uterine abnormalities

In the case of pregnancy, progesterone levels should remain high and the menstrual cycle will be placed on hold. It warms the body. It also exerts utero-relaxing effects that are important at the time of implantation and beyond for successful pregnancy outcome. The maternal and foetal tissues come in direct contact without rejection suggests the immunological acceptance of foetal graft by the mother.

The progesterone levels peaks at mid-secretory phase have been estimated at 15ng/ml around 21st day of the menstrual cycle, coinciding with the day of implantation. A progesterone level greater than 10 to 15ng/ml generally indicates adequate luteal function and no need for progesterone supplementation in infertile women. Luteal phase defect is diagnosed when the endometrial thickness is less than 8mm in the late premenstrual phase. If progesterone levels do not elevate enough after ovulation or drop too soon before menstruation, this can cause a short luteal phase.

**Diagnosis Of LPD:**

LPD is diagnosed clinically, biochemically and sonologically

**Clinical :**

a. Detailed menstrual history to know the length of luteal phase. The luteal phase should last for at least 12-14 days. Some patients may give history of ovulation pain.

b. Basal body temperature (BBT) record

During a normal luteal phase there is high temperature around 12-14 days. If the number of days of thermal increase (usual increase 0.4 to 1 degree F in luteal phase) is less than 10 days then the patient is suspected to have LPD. A luteal phase which is less than 10 days will have difficulty to produce an environment favourable for implantation. BBT charting involves taking temperature every morning upon waking with a basal thermometer.

**Biochemical : Serum progesterone (Day 21 progesterone test):**

Many physicians believe that progesterone level 10-12 ng/ml or more one week prior to the onset of menstruation or day 21 is normal. Value lesser than that is diagnostic of LPD.
Urinary LH :
It indicates ovulation.

Sonological studies:
TVS findings of 6-10mm and a triple line (trilaminar) pattern in late follicular phase with low pulsatile index in the uterine arteries predict successful implantation

Endometrial biopsy :
It is the gold standard in the diagnosis of LPD. There will be a lag of more than 2 days of histological development of secretory endometrium compared to the day of the cycle

Clinical Correlation
Based on the clinical presentation, LPD can be clinically correlated to pathologies like Puthraghni yonivyapath, Vamini yonivyapath, Asrja/Apraja yonivyapath, Garbhasraavi vandhya, Jathaharini

Management
Luteal support is the method adopted. Progesterone should be supplemented until 10 weeks of gestation. Synthetic progesterone like 19 norprogestins can have various complications. Ayurveda relies on a holistic approach in the treatment of such cases and advocates that sareera shuddhi (purification of body), and mana shuddhi (purification of mind) of couples are essential for conception. The importance and benefits of preconceptional care is detailed in Ayurveda classics.

PRECONCEPTIONAL CARE
According to WHO, preconceptional care is the provision of biomedical, behavioural and social health interventions to women and couples before conception occurs. Its ultimate aim is to improve maternal and child health, in both the short and long term. It describes the regimen and rituals before pregnancy to take care of the foetus from the state of gametes to promote the multistrated well-being of the child.

Ayurveda also emphasizes on a planned pregnancy than a pregnancy by chance. Purvasamyogavidhi is indicated for couples as a routine practice prior to conception. The couple after being purified by the use of sneha, sweda, vamana, virechana followed by samsarjana krama shoud be given asthapana and anuvasana. After these, the man should use ghrita(ghee) and ksheera(milk) medicated with madhura dravya and the woman should consume thaila (sesame oil) and masha (Vigna mungo). Then they should engage in sexual intercourse with psychological intimacy. The diet should be Rasayana & Garbhasthapaka (that helps in implantation & stabilization of pregnancy). Psychological status of the couple is also important in this regard. "Saumanasyam garbadhaaranaanaam ||"
Garbhasthapana

Stability of foetus means maintenance or continuation of pregnancy without early termination. Garbhasthapana drugs are those which after counteracting the effect of harmful factors for foetus, help in proper maintenance and stability of foetus.\textsuperscript{13} Thus, this can be considered even as the treatment for abortion. In order to prevent recurrent pregnancy loss, the aspect of sthapana or maintenance of foetus in healthy state is important.

\textit{Phalasarpi, Kalyanaka ghritha} are the important formulations described in Preconceptional care in Ayurveda classics. \textit{``Snehai: pumsavanai: snigdham...''}\textsuperscript{14}

\textbf{Phalasarpi}

\textit{``..pushpe peetham phalaya yat''}\textsuperscript{15} – Will result in conception if administered during fertile period.

\textit{`` mriyamaana prajaatanam garbhoneenam cha poojitham ||''}\textsuperscript{15}  

Is beneficial in recurrent pregnancy loss

\textit{``...pumsavanam param ||''}\textsuperscript{15}

Pumsavana is intended for \textit{garbhagrahana (achieving conception), garbhasthapana (maintenance of pregnancy) and puthraapathyajanana (birth of a male child)}\textsuperscript{16}

\textbf{Kalyanaka ghrita}

\textit{``Arethasyaprajasi...''}\textsuperscript{17} Can be administered in both male and female infertility; where there is abnormalities in \textit{rethas} (seminal parameters) and in defective \textit{rajas} (ovulatory factors)

\textit{``Sreshtam pumsavaneshu cha ||''}\textsuperscript{17} Best among those administered for \textit{Pumsavana}

The following protocol can be adopted in preconceptional care:\textsuperscript{14}

- \textit{Snehapana}

- \textit{Sodhanan} – (Vamana, Virechana)

- \textit{Vasthi} (Asthapana vasthi, Anuvasana vasthi, Utharavasthi)

\textbf{After shodhana chikitsa}

Internal medication only, \textit{Phalasarpi} or \textit{Kalyanaka ghrita} can be given as \textit{vicharana snehapana}. If conception occurs, preconceptional care can be carried over with antenatal care.

Preconceptional care through this protocol aims towards achieving a conception, maintenance of pregnancy, uneventful antenatal period and the delivery of a healthy baby.
DISCUSSION

The causes of infertility are varied. Luteal phase defect or LPD is one among those causing female infertility. In LPD, there is inadequate progesterone support to the endometrium in the luteal phase. As a result, there is either inability to conceive or there may be early pregnancy loss. *Puthraghni yonivyapath, Vamini yonivyapath, Asrja/Apraja yonivyapath, Garbhasraavi vandhya, Jathaharini* can be correlated to recurrent pregnancy loss due to LPD. Ayurvedic medicines work well in managing LPD in a planned pregnancy through preconceptional care. Ayurveda gives emphasis to a planned pregnancy than a pregnancy by chance. Preconceptional care should be started 3-4 months before conception. *Ahara* (diet), *vihara* (regimen) and *oushadha* (medicines) play equal role. *Prakrithi, koshta, agnbala and sareera bala* should be assessed. Routine investigations should be done. Menstrual and seminal abnormalities should be corrected. BMI also should be normalised because weight loss and overweight cause defects in ovulation. Correct systemic or endocrine disorders if any. The male partner should quit alcoholism, smoking and such other habits. Food habits should be regulated. Avoid fast foods and other non-congenial diet and regimen. *Dinacharya* and *Rithucharya* (daily and seasonal regimen) should be followed. Psychological status of both the partners is important, which influences the mental build up of the child.

Preconceptional care through *Purvasamyogavidhi* is very important for a healthy conception finally leading to the birth of a ‘shreyasi praja’. *Purvasamyogavidhi* is indicated for couples as a routine practice, even in the absence of any pathology or a bad obstetric history. Aim of *chikitsa* (treatment) is to normalize *Vata pradhana sannipata doshakopa*. *Samanya chikitsa* (general treatment) is *Yonivyapath chikitsa*. *Nidana parivarjana* – Includes avoiding *Garbhopaghatakara bhava* (factors that harms the foetus). *Oushadha prayoga* (medical management) – Includes *Shodhana chikitsa* (purificatory therapies), *Shamana chikitsa, Utharavasthi* (intrauterine instillation). *Visesha chikitsa* includes *Garbhasthapana chikitsa* (measures to stabilise pregnancy), *Masanumasika sravahara yoga* (monthwise abortion-preventing drugs), *Garbhini pathya* (diet beneficial in pregnancy).

CONCLUSION

LPD is one of the common causes of female infertility. Either the woman will not conceive or will end in pregnancy loss. LPD can be effectively managed by Ayurvedic medications including *Sodhana chikitsa*. Adequate preconceptional care can improve pregnancy outcome in LPD. It includes the interventions that are provided to the couple before conception to promote their well-being with the ultimate aim of achieving a healthy conception and to improve pregnancy outcome. Ayurvedic medications can be effectively substituted in luteal phase defect, thus leading to conception and for maintaining the pregnancy till delivery. Developing an Ayurvedic treatment protocol for luteal phase defect based on preconceptional care can create a breakthrough in the treatment of infertility.
REFERENCES


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