



AN ANALYTICAL STUDY OF PRAJASTHAPAN MAHAKASHAYA ON VANDHYATWA W. S. R. TO FEMALE INFERTILITY

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ABSTRACT

In *Charaka samhita*, among the fifty important decoctives, *Prajasthapan mahakashaya* (fertility promoters) was introduced according its *Doshaj prabhav* (specific action) of the drugs and promotes strength and conceiving by removing *Doshas* to female reproductive system. These drugs are also having *Rasayana* properties, which improve the quality of all body elements. These herbs can be used all together or individually or in permutation combinations of each other on the patient's condition. In short, *Prajasthapan mahakashaya* can be used in all conditions involving obstruction in the path of conception and help in fixing or lead to excellence in progeny. Female *Vandhyatwa* (Infertility) may cause twenty *Yoni vyapad* (gynaecological disorders), infections, weakness, psychological factors like anxiety, depression etc., may leads disturbance in the *Ritu* (fertile period), *Ambu* (nourishment for developing the zygote), *Beeja* (activated ovum), *Kshetra* (Physiological maturity and healthy organs of reproductive system). The objective of the present study is an analytical study of *Prajasthapan mahakashaya* on *Vandhyatwa* with special reference to female infertility and to analyse all ten drugs of *Prajasthapan Mahakashaya* to collect the information on latest studies on above mentioned factors.

KEYWORDS: Prajasthapan Mahakashaya, Vandhyatwa, Female Infertility.

INTRODUCTION

The desire of a woman for a children is sometimes stronger than itself interest in beauty and figure. Childless may be a tragedy to the married woman and can be a cause of a marital upset as well as a personal unhappiness and ill health.

In ancient Vedic literature, the importance of children is high. Acharya Manu has mentioned that "Stri is born for reproduction" Manu says "the woman destined to bear children as they are, are possessed of the highest excellence, are worthy of worship and brighten up the house. In Hindu Dharm God is often compared to a mother and is worshipped in the form of the Divine mother.

Pregnant woman were exempted from praying ferry tolls and were granted some other exemption due to its high regard for motherhood. It was forbidden to hurt pregnant animals. In Manu Smriti position of mother reached its highest altitude.

Acharya charak has explained that

"The woman is the origin of progeny". (*C. Chi. 30/5*)^[1]

Ability to reproduce and perpetuate the species is one of the most remarkable feature of living system. Childless result from failure to conceive. Infertility is the absolute state of inability to conceive. The fertility of marriage is a sum of the fertilities of the two partner. Human infertility is regarded as a disgrace, as a mark of Divine displeasure, as a ground for divorce and even for compulsory suicide.

Acharya Sushruta has described four essential factors for fertility which are:^[2]

1. **Ritu:** Proper fertile period.
2. **Ambu:** Proper nourishment for developing the zygote.
3. **Beeja:** The activated ovum and sperm.

4. **Kshetra:** Physiological maturity and healthy organs of reproductive system.

Fulfillment of all the above essentials ensures the fullness of motherhood. Any short come of the above factors impedes the conception and thus the motherhood of a woman. A woman of reproductive age who has not conceived after one year of unprotected vaginal sexual intercourse is defined as infertility. [3] Failure to achieve conception by a couple of mature age, having normal coitus, during appropriate period of menstrual cycle, regularly at least for one year is termed as infertility. It develops due to fault in either of the partner or both of them. In our male dominating society of India, this is considered as a imprecation for a woman. Being infertile is a psychological trauma for a woman. Now a days percentage of infertile couple increasing due to late marriage, marital disharmony and psychological factors etc.

Vandhyatva/Infertility is also an independent disease rather a cardinal feature of so many diseases. In Sushruta Samhita, the vandhyatva has been included in *twenty yoni vyapad*. [4] Acharya Charak and Vagbhatta have referred Vandhyatva due to abnormalities of beejasma. First time Acharya Harita has classified *Vandhyatava* in detail.

Infertility is defined as “failure to conceive with one or two years of regular unprotected coitus”. It is divided into two groups.

(a) Primary Infertility

(b) Secondary Infertility

Description of Prajasthapan Mahakashaya is found in the fourth chapter of Sutra-Sthan of charak samhita. In this chapter fifty Mahakashaya have been described. They are named and titled on the basis of Karma. Among these, Prajasthapan Mahakashaya has been placed on the forty nine number.

Ten drugs when have been included are as follows. [5]

<i>Brahmi</i>	:	<i>Bacopa monnieri</i> (L.) pennell
<i>Aindri</i>	:	<i>Centella asiatica</i> (L.) urban
<i>Shatavari</i>	:	<i>Asparagus racemosus</i> willd.
<i>Doorva</i>	:	<i>Cynodon dactylon</i> (L.) pers.
<i>Patala</i>	:	<i>Stereospermum suaveolens</i> Gaertn.
<i>Guduchi</i>	:	<i>Tinospora cardifolia</i> Miers.
<i>Haritaki</i>	:	<i>Terminalia chebula</i> Linn.

<i>Kutki</i>	:	<i>Picrorhiza kurroa</i> Royle ex Benth.
<i>Bala</i>	:	<i>Sida cordifolia</i> Linn.
<i>Priyangu</i>	:	<i>Callicarpa macrophylla</i> Vahl.

Today when we are on the threshold of 21st century with the advancement of sciences, we should have a clear understanding of the treatment which we are offering for the welfare of human being. So with the help of Ayurveda as well as modern medical text this litero-analytical study has been done with the following aim and objectives.

1. To recollect the vast knowledge and description of various drugs of Prajasthapan Mahakashaya along with their availability and practical utility in present era.
2. To describe modern pharmacognosy of these drugs more scientifically.
3. Lastly to analyze the effect of these drugs on body in those diseases which are related to female infertility as well as healthy individual literally and how these drugs can be effective.

GENERAL DESCRIPTION OF VANDHYATVA

DEFINITION

According to Ayurveda Acharya Sushruta:

A woman whose artava is perished is called vandhya [6]. i. e. Congenital deformity or Maldevelopment of genital organs leads to infertility.

1) Kashyapa in first part of rewati kalpa has mentioned various jataharinis and since in these conditions a woman fails to get a child thus these can be included under infertility. He also included Vandhyatva in eighty Vata rogas.

Accroding to Modern View

Fertility is defined as the capacity to reproduce or the state of being fertile.

Infertility

The most commonly accepted definition of the term infertility is "One year of unprotected intercourse without pregnancy". (Novak's gynaecology 13th edition).

i). Vandhya

When the bijabhaga in the ovum of the mother which is responsible for production of uterus is excessively vitiated, she give birth to a sterile child. It refers of incurable congenital or

acquired abnormalities resulting into absolute sterility.

ii). **Apiaja**

Infertility in which women conceive after treatment. This condition comes under primary infertility. (Chakrapani on Ch. Chi. 30/16) Hi)

iii). **Avandhya**

This word has been described by Chakrapani. To use word Avandhya for a childless women but capacity to conceive with quiet delay. This condition comes under unexplained infertility.

iv). **Sapraja**

Sapraja is a condition in which a woman in her active reproductive age does not conceive after giving birth to one or more children & it refers to secondary infertility.

Mainly two types are described

a) Sterility

b) Infertility

a) Sterility -It implies that absolute inability to conceive because of congenital anomalies, ailments or surgical procedure either in males or females or both.

b) Infertility - Infertility implies that apparent failure to conceive. This condition may be further classified as -

i) Primary infertility - If conception has never occurred.

ii) Secondary Infertility- If the patient fails to conceive after having achieved a previous conception. (Ref. Shaw's text book of gynaecology)

To see the above description about vandhyatva in Ayurveda, it can be concluded that the definition of infertility/sterility i. e. failed to conceive (may be primary or secondary) in modern science, is a part of the definition of Vandhyatva in Ayurveda. Main aim of Ayurveda is to get a healthy normal child *supraja*. The baby should fulfill the definition of *Swastha* i. e. "A man considered perfectly healthy when his content like *Doshas*, *Agni*, *Dhatu* & *Mala* are in equilibrium and along with his *Indriyas* (Senses), *Atma* (Soul) & *Mana* (mind) are in tremendous happiness. (S. Su. 15/48)

So, *Garbhapat*a or *Garbhasrava* (may be repeatedly), still birth baby or Death of consecutive child after a healthy child etc. of a

woman come under the heading of *Vandhyatva* in Ayurveda.

ESSENTIAL FACTORS FOR CONCEPTION

Acharya Sushruta has described four factors are necessary for conception these are *Ritu*, *Kshetra*, *Ambu* & *Beeza*. If these 4 factors^[8] assemble together, the conception will definitely occur.

Ritu

According to most of the classics *Ritukala* is comprises of twelve or sixteen days after menstruation. if reproductive system is healthy it may be of entire month, some times *ritu kala* may come up without menstruation since the seeds (sperms) deposited during this period are likely to bear fruit (conception) hence it is termed *ritukala*. After this period the *yonidwara/yonimukha* is closed (S. Sha. 3/7 A. H. Sh 1/22) which *do not* allow reception of *shukra* (sperm). If coitus is done *ritukala* than it will be fruitful if coitus is done after *ritukala* it will be futile due to non entry of sperm. If coitus is done during menstruation it will be useless because *shukra* will flow out alongwith menstrual blood comparing it with flow of river (S. Sha. 2/33). If somehow conception takes place, certain complications like abortion, still birth etc. will arise and if perchance full term baby is born it will be either physically or mentally debilitated (K. S. Sha. *Jatisutriya Adhyaya*). This *ritu* is probably proliferative phase including ovulation in females. (Prof. P. V. Tiwari 1¹)73). Since modern science also states that ovulation occurs mostly around 14th to 16th day of menses but may occur anytime between 7th to 21st day in some cases. After ovulation, ovum has life span of 18 hrs only. If male seed is present during this time fertilization takes place, otherwise coitus becomes fruit less. After ovulation during secretory phase due to influence of progesterone hormone cervical mucus becomes hostile to sperm penetration.

Kshetra

Represents the female reproductive organs, it play a very important role in process of fertilization.

Ambu

'Ambu' literally means water or *Jala*. *Jala* represents the essential watery material for conception meaning particularly the *Aahar rasa*. After fertilization the *zygote* thus formed receives its nourishment for next 3 or 4 days from secretions of fallopian tubes. After reaching the uterus it obtains its nutrition from the mucous membrane of the uterus, which contains glucose & albumin as nourishing factors. After due course the *blastocyst* gets embedded in the uterine wall & gets its nutrition directly from

rakta & rasa. If nutrition of zygote is hindered anywhere at the level of rasa and rakta then the zygote does not survive, thereby leading to infertility. Failure to achieve a child may be due to faulty production of essential ambu.

Beeja

Beeja represents both male and female beeja as may be compared as Artava & Shukra. Both shudh artava & shudha shukra when fertilize conception occurs, if it is vitiated by dosha then no conception will occur.

TREATMENT

According to Ayurveda

Acharyas have mentioned about the treatment of vandhyatva. In Ayurvedic classics there is no specific treatment of vandhyatva but treatment has been given according to the causes i. e. yonivyapad, shukra dosha, artava dosha etc. Therefore it is very important to find out the causes which are responsible for Vandhyatva.

Principles of Treatment

1. Treatment of specific causes responsible for infertility such as treatment of all the gynaecological disorders including injury to the uterus or its prolapse, diseases of Shukra and Artava and Yonyarsha etc. should be done. The Acharyas have mentioned unequivocally that pregnancy occurs only in case of healthy reproductive organs.
2. Forsaking of different etiological factors such as abnormal diet and mode of life, coitus before or after Ritukala, psychological troubles etc.
3. Use of strength producing and Brimhana articles to compensate the loss of Bala and Dhatus.
4. Vitiating vata is responsible for Yonivyapad, so first of all we must do Vatasaman, then treatment of other Dosha.
5. The drugs prescribed for Pumsawana Karma can also be used.
6. After using oleation, sudation, emesis, purgation, Asthapana and Anuvasana Basti in consecutive order, the man should be given milk and Ghrita medicated with sweet drugs and oil and Masha to the woman, according to the opinion of some authors. Kashyapa says that after using cleansing measures i. e. Panchakarma both the partners should be prescribed congenial diet.

7. The infertile woman should be prescribed with emesis, purgation and Asthapana Basti. With the help of these procedures the woman conceives positively and delivers normally.
8. The use of Basti in infertility due to diseases of Vata is highly beneficial. By the use of Basti, the Yoni becomes healthy and even a sterile would conceive.
9. **Vandhyatvahara Yoga:** Though all the drugs prescribed for gynaecological disorders are to be used in infertility but there is mention of some drugs or recipes which are indicated only for the achievement of conception by an infertile woman. They are classified as external medication - Local medication and oral medication. Briefly they may be presented as under:

External Medication: Drugs for external use include nasal instillations, massage and Basti etc.

Nasal instillations of Lakshmana Juice drops triturated with cow's milk results in conception. Narayana oil should be used in the form of nasal pourings, massage, tisane or potion and Basti. With the use of this oil an infertile woman gets a son. The infertile woman having undergone cleansing by sequential use of these procedures should be given the Basti of Shatapaka Taila, Trivritta Sneha and Bala Taila etc.

Oral Medication: Drugs like Shatapushpa & Shatavari Kalpa, Maharasnadi decoction, Narayana Taila, Shatavari Taila, Baladya Taila, Laghuphalaghrita, Phalaghrita, Sheeta Kalyanghrita, Shatavari Ghrita, Lashunaghrita and Puga Paka etc. are indicated for infertility under the oral medication.

PRAJASTHAPANA DRUGS

1. Brahmi (Bacopa monnieri (L.) pennell)

Brahmi is named after the Hindu God Brahman who is pervading consciousness responsible for all "creative forces" in the world. Brahmi means divine and is also one of the 8 Divine Mothers of all created beings. The word Brahmi also refers to Saraswati, the Goddess of speech, creativity and sacred knowledge. In India Brahmi is used as a memory aid for many years.

The plant is an aquatic creeping perennial herb, and distinctive white flower. It is an effective and powerful brain and nerve tonic.

Cells in the brain and nerves are restored and revitalized by this herb and thus is acting in restoring nervous functions. It is a hydrophyte capable of phytoremediation and it would be the most toxic plants in its environment.

Charak Samhita

Acharya charak has described *Brahmi* as nerve tonic, improves the brain cell functions and hence used in various mental conditions leading to psychosis and is a perennial creeping plant. *Brahmi* was kept in *Balya* and *Prajasthapan gana* of *Mahakashaya* which are examples of *Balyaadi varga* and *shoditasthapanadi varga* respectively. These drugs are used as tonic and foetus promoting drug. The drug has been used in the form of compound formulations (*churna, ghrita, taila, avaleha* etc) in the book. Some formulations related to my topic are as follows.

Preparation	Indication	References
<i>Andri rasayan</i>	<i>Rasayan</i>	Ch. chi. 1-3/26-29
<i>Indrikta rasayan</i>	<i>Rasayan</i>	Cc. chi 1-4/6
<i>Bramhighritam</i>	<i>Apasmar</i>	Ch. Chi. 10/25
<i>Vachaadighritam</i>	<i>Apasmar</i>	Ch. chi. 10/27
<i>Mahapaicachiok aghritira</i>	<i>Unmad</i>	Ch. chi. 9/45-48
<i>Mustaadivarti</i>	<i>Apasmar</i>	Ch. chi. 10/48

Sushruta samhita

Adhupdesta of Shushruta Samhita was 'Bhagwan Dhanvantari' (2350B. C.). It was written by 'Vridha Sushruta'(1000 B. C.) who was almost the contemporary of Agnivesha. Pratisanskarta of Sushruta samhita was 'Acharya Sushruta'. Punaha pratisanskarta was 'Nagarjuna' and pathshuddhikarta was 'Chandrata.' *Brahmi* was kept in *Viratarvadigana* and used to be effective in memory loss. This herb is also effective in unrelieved disorder, nervous break down, insomnia and pain, controlling cholesterol level.

Various preparations and indications related to the topic are as follows-

Preparation	Indication	References
<i>Swaras rasayan yog</i>	<i>Rasayan</i>	S. chi. 29/4
<i>Brahmighritira rasayan</i>	<i>Rasayan</i>	S. chi. 29/6
<i>Brahmisneha</i>	<i>Vatavikara</i>	S. chi. 29/5

Astanga Hridaya

This samhita was composed by 'Acharya Vagbhatta in 7 th century. In this treatise there are systemic description of Astanga Ayurveda.

Various preparations and indications related to the topic are as follows

Preparation	Indication	References
<i>Ashtangaghrita</i>	<i>Medhya</i>	A. H. U. 1/43-44
<i>Brahmighrita</i>	<i>Garbhaprada</i>	A. H. U. 6/24-25
<i>Shishukalyanak ghrita</i>	<i>Aayush</i>	A. H. U. 1/42
<i>Brahmighrita 2</i>	<i>Apasmar</i>	A. H. U. 7/24
<i>Brahmivarti</i>	<i>Unmad</i>	A. H. U. 6/38-40
<i>Mahapaicachik aghrita</i>	<i>Rasayan</i>	A. H. U. 6/34

Sharangdhar Samhita

This samhita is included in Laghutrayi. It was composed by 'Acharya Sharangdhar'. The samhita is divided in three khand i. e. Purva Khand (7 chapter), Madhya Khand (12 chapter) & Uttar Khand (13 chapter).

The formulations as used in various diseases which nourishes my topic are given as follows-

Preparation	Indication	References
<i>Brahmi Swaras</i>	<i>Unmad</i>	Sh. S. M. K. 1/18
<i>Viratarvadi kwath</i>	<i>Vata Roga</i>	Sh. S. M. K. 2/102-104

Bhava Prakash

Acharya Bhava Mishra describes *Brahmi* in *Guduchyaadi varga*. The formulations as used in various diseases which nourishes my topic are given as follows.

Preparation	Indication	References
<i>Saraswat Churna</i>	<i>Unmad</i>	B. P. 22/46-47
<i>Asthamandal Ghrita</i>	<i>Bhoota</i>	B. P. 71/37
<i>Swaras</i>	<i>Unmad</i>	B. P. 22/33

Research Work on *Brahmi* (*Bacopa monnieri*)

The uterus is made up of blood and muscle tissue. The uterus becomes weak due to mamsa (muscle), Meda (fat) – kapha vitiation leading to the accumulation of Kleda (exudation). *Brahmi* (*Bacopa monnieri*), *Katuki* (*Picrorhiza kurroa*), *Doorva* (*Cynodon dactylon*), *Patala*

(*Stereospermum suaveolens*) and Haritaki (*Terminalia chebula*), by their katu (pungent)-tiktha (bitter) - kashaya (astringent) taste, laghu (light) and rooksha (dry) qualities dry the exudation, stimulate the circulation and nourish the foetus^[9].

Bacopa monnieri is a perennial herb with a world known image as a nootropic. We investigated the effect of *Bacopa monnieri* methanolic extract (Mt Ext BM) 10, 20, and 30 mg/kg body weight (b. w) on acquisition and expression of morphine withdrawal induced depression in mice.^[10]

1. Antistress effects of Bacosides of *B. monnieri*; modulation of Hsp 70 expression superoxide dismutase and cytochrome P450 activity in rat brain.^[11]
2. Calcium antagonistic activity of *B. monnieri* on vascular and intestinal smooth muscles of rabbit and Guinea pig.^[12]
3. Free Radical scavenging capacity and protective effect of *B. monnieri* on DNA damage.^[13]
4. Relative efficiency of *B. monnieri* in the alteration of thyroid hormone concentration in male mice.^[14]
5. A one-month, limited clinical trial of 35 patients with diagnosed anxiety neurosis demonstrated that administration of Brahmi syrup (30 mL daily in two divided doses, equivalent to 12 g dry crude extract of *Bacopa*) resulted in a significant decrease in anxiety symptoms, level of anxiety, level of disability, and mental fatigue, and an increase in immediate memory span. Other changes noted were increased body weight, decreased respiration rate, and decreased systolic blood pressure.^[15]
6. A study on mice demonstrated high doses (200 mg/kg) of *Bacopa* extract increased the thyroid hormone, T4, by 41 percent when given orally. T3 was not stimulated, suggesting the extract may directly stimulate synthesis and/or release of T4 at the glandular level, while not affecting conversion of T4 to T3. While this study indicates *Bacopa* extract does have a stimulatory effect on thyroid function, the doses were very high and the typical 200-

400 mg daily dose in humans may not have the same effect.^[16]

2. Aindri (*Centella asiatica* (L.) urban)

Raj nighantu and Kaiyadevanighantu follow *Centella asiatica* as a synonym of Brahmi. The another of Dhanvantari-nighantu treats *Centella asiatica* and Madhuk as a synonym of *Helianthus annuus*. P. V. Sharma is Dravyaguna Vigyan identifies *C. asiatica* as Brahmi. He uses a Sanskrit name Aindri for *Bacopa monnieri* and adds few properties to it those given for Laghu Brahmi by Rajnighantu.

In kerala Aindri as *Citrullus colocynthis*, Brahmi and *C. asiatica* are entirely different plant as Sushruta Samhita in Rasayan Vidhi describes Madhukparni and Brahmi separately. Again Brahmi and Madhuk has been regarded as two drugs in the formulation of Astangaghritam in Astamaga hridayam.

So it is concluded that in kerala Brahmi is identified as *B. monnieri* and sometimes called Nirbrahmi also. In north Indian Brahmi is identified as *C. asiatica*. Astangahridayam treats *C. asiatica* as a synonym of Brahmi.

In Vedic literature we may find the extensive description of mandukparni in Atharvaveda. In Matsya purana, it is mentioned among the medicinal plants that are beneficial for brain. In *Agnipurana* it is placed with sterilizers and for curing kamala (Ag. pu. 300. 34). It is used with milk in valli palit (Ag. pu. 286.)

Among the eight brahmanas, mandukparni is described in Shathpathbrahmanas, in Kaushiksutra, it is described as an aushadhi which resembles manduka.

Aindri in Samhita Granthas

Charak Samhita

Acharaya Charak kept it in Balya, prajasthapan, and vayasthapan gana of balyaadi varga and shonithsthanpanadi varga respectively. Mandukparni described as prrabrati shaka in aahar varga. The formulations as my topic are used in various diseases which nourishes given as follows.

Preparation	Indication	References
<i>Brahma rasayana 1</i>	<i>Rasayana</i>	Ch. Chi. 1/41-57
<i>Medhya rasayana</i>	<i>Rasayana</i>	Ch. Chi.

Astanga Hridaya

The formulations as my topic are used in various diseases which nourishes given as follows.

Preparation	Indication	References
<i>Astanga grita</i>	<i>Rasayana</i>	A. H. U. /43
<i>Brahmi grita</i>	<i>Infertility</i>	A. H. U. 6/23

Research Work on Centella asiatica

1. Components isolated from *Centella asiatica*, such as brahmoside and brahminoside, may be responsible for CNS and uterorelaxant actions, but are yet to be confirmed by clinical studies. Crude extract containing glycosides isothankuniside and thankuniside showed antifertility action in mice.^[17]
2. The total triterpenes present in plant had antidepressant activity in forced swimming mice and ameliorated the imbalance of amino acid levels.^[18]
3. Triterpenes showed antidepressant effect and caused significant reduction of the corticosterone level in serum and increase in the contents of monoamine neurotransmitters in rat brain.^[19]
4. Anti inflammatory of *C. asiatica* was studied in by PGE2 induced paw edema. Water extract of *C. asiatica* revealed significant antinociceptive and anti inflammatory activity. This activity is similar to Aspirin an NSAID^[20].
5. *C. asiatica* by acting as a potent antioxidant exerted significant neuroprotective effect and proved efficacious in protecting rat brain against age related oxidative damage.^[21]

3. Shatavari (Asparagus racemosus willd.)

In vedic period we can not found Satavari as an internal medicine but is was used as an external therapy in the form of "Mani". According to Acharya Sayana" Shat Sankhayakan Rogan Nivaryatilti Shatavarah" It means the Mani which is able to kill 100 diseases is called Shatavari.

Shatavari Mani is being used to kill different diseases named Papma, Yakshma, Rakshana, Graha, Apasmara, Dadru, Kushtha etc. And lastly one unique property of the Swatavar

Mani is stated and that is as a *Vajikarana Auswadha* (Aphrodisiac Medicine).

Charak Samhita

Acharya Charak has described *Shatavari* in different *Gana*, as *Mulasava & Shakavarga* etc. The drug has been kept in *Balya, Shukrajanana, Prajasthapak & Vayahsthapak gana* of mahakashaya which are examples of balyaadi varga, stanyajananaadi varga and shoditasthapanaadi varga respectively. The drug has been used in the form of compound formulations as churna, ghrita, taila, avaleha etc. which nourishes my topic are mentioned as follows-

Preparation	Indication	References
<i>Balya Mahakashaya</i>	<i>Balya</i>	Ch. Su. 4/7
<i>Prajasthapan Mahakashaya</i>	<i>Garbhadharam</i>	Ch. Su. 4/49
<i>Garbhasthapak Aushadhi</i>	<i>Garbhasthapan</i>	Ch. Su. 8/20
<i>Amritprasha Ghrita</i>	<i>Kshat-kshina</i>	Ch. Chi. 11/36
<i>Bala Taila</i>	<i>Vata-pittaja, Yoni rog, Garbha</i>	Ch. Chi. 30/51
<i>Chandanadi NiruhaVasti</i>	<i>Yoni Dosha</i>	Ch. Si. 3/49
<i>Chatuh Sneha Anuvasan Vasti</i>	<i>Vandhyatva</i>	Ch. Si. 12/18(1)

Sushruta Samhita

Acharya Sushruta kept the drug *Shatavari* in *Vidarigandhadi Gana, Varunadi Gana & Kantaka Panchmula*. The drug has been used in the form of compound formulations as churna, ghrita, taila, avaleha etc. which nourishes my topic are mentioned as follows-

Preparation	Indication	References
<i>Aushadhi Siddha Dugdha</i>	<i>Garbha srava, Shoola</i>	Su. Sa10/62
<i>Shatavari with Dugdha Masanumasik Dwitiya masa</i>	<i>Garbha srava</i>	Su. Sa. 10/63
<i>Bala Taila</i>	<i>Vandhyatva</i>	Su. SI. 15/33
<i>Balamula rasayan Yoga</i>	<i>Rasayan</i>	Su. Chi. 28/21
<i>Shatavari Ghrita</i>	<i>Rasayan</i>	Su. Chi. 28/21

Astanga Hridaya

Acharya Laghu Vagbhata placed the drug *Shatavari* in *Shaka Varga, Madhura Ganadravya,*

Pittanashak Gana. Bagbhatta has used the drug Shatavari in various formulations for the treatment of Vandhyatva Yoni roga, Garbhsthan, Amlapitta, Raktapitta given as follows.

Preparation	Indication	References
<i>Madhur Gana dravya</i>	<i>Kapha Vardhak, V-Pnashak</i>	A. H. Su. 10/22
<i>Pittanashak gana</i>	<i>Pittashamak</i>	A. H. Su15/6
<i>Bala Taila</i>	<i>Sarva Vata Vyadhi Yoni roga</i>	A. H. Sa2/47-52
<i>Balamula rasayan Yoga</i>	<i>Rasayan</i>	S. Chi. 28/21
<i>Shatavari Ghrita</i>	<i>Rasayan</i>	S. Chi. 28/21
<i>Aushadayoga</i>	<i>Dwiyiya masa garbha srava</i>	A. H. Sha. 2/54

Sharangdhar Samhita

The formulations as are used in various diseases which nourishes my topic given as follows.

Preparation	Indication	References
<i>Shatavari swarasa</i>	<i>Pittaja Shula</i>	Sh. M. Kh. 1/15
<i>Maharasnadi kwatha</i>	<i>Sarvangvata Vandhya</i>	Sh. M. Kh. 2/92
<i>Shatavari Taila</i>	<i>Vrishya</i>	Sh. M. Kh9/133
<i>Baladhya Taila</i>	<i>Sarvavata roga</i>	Sh. M. Kh. 9/115

Bhava Prakash

In Bhava Prakash Acharya Bhava Mishra denotes the drug Shatavari as "Pratinidhi dravya" of Meda and Mahameda in Mishra Prakaran of Pratham Khand (6/155). & also included shatavari in Vajikar dravya. The Formulations are as follows.

Preparation	Indication	References
<i>Brihat Kushmanda Avaleha</i>	<i>Raktapitta, Vrishya</i>	B. P. Raktapitta Chi. -64
<i>Khandakhadya lauha</i>	<i>Raktapitta Putrada</i>	B. B. Raktapitta Chi-75
<i>Mahachaitas ghrita</i>	<i>B. B. Raktapitta Chi-75</i>	B. B. Raktapitta Chi-75
<i>Mahachaitas ghrita</i>	<i>Apasmar, Unmad,</i>	B. P. Unmad Chi-53

	Vandhyatwa	
<i>Phala ghrita</i>	<i>Yonirajodosh</i>	B. P. Yonidosha-54

Research Work on Shatavari (Asparagus racemosus)

Hyperplasia of the glandular and muscular tissue and hypertrophy of the glandular cells were observed in the genital organs. The parenchyma of the genital organs showed abundant glycogen granules with dilated blood vessels and thickening of the epithelial lining. The oviduct in the treated group showed hypertrophied muscular wall, whereas the ovary revealed no effect of the drug. The results suggest an oestrogenic effect of Shatavari on the female mammary gland and genital organs. [22]

A glycoside, Shatavarin I, isolated from the root of *A. racemosus* has been found to be responsible for the competitive block of oxytocin-induced contraction of rat, guinea pig and rabbit's uteri, in vitro as well as in vivo. [23]

The saponin rich fraction was shown to have antioxytocic activity. The saponin inhibited oxytocin-induced uterine contractions in vivo. [24]

Different concentrations (50, 100, 150 mcg/mL) of the methanol extract of the roots of *Asparagus racemosus* showed considerable in vitro antibacterial efficacy against *Escherichia coli*, *Shigella dysenteriae*, *Shigella sonnei*, *Shigella flexneri*, *Vibrio cholerae*, *Salmonella typhi*, *Salmonella typhimurium*, *Pseudomonas putida*, *Bacillus subtilis* and *Staphylococcus aureus*. [25]

Membrane damage induced by free radicals generated during gamma-radiation were examined in rat liver mitochondria. An extract of shatavari was shown in vitro to have potent antioxidant properties in mitochondrial membranes of the rat liver. Both the crude extract as well as a polysaccharide-rich fraction significantly inhibited lipid peroxidation and protein oxidation. Both fractions also partly protected against radiation-induced loss of protein thiols and inactivation of superoxide dismutase. [26]

Methanolic extract of shatavari roots (1000 mg/kg/day for 60 days) showed teratological effects such as increased resorption of fetuses and gross malformations E.g. swelling in legs and intrauterine growth retardation with a small placental size in Charles

Foster rats. Pups born to a mother exposed to shatavari roots for the full duration of gestation showed evidence of higher rate of resorption and therefore smaller litter size. The live pup showed significant decrease in body weight and length and delay of various developmental parameters when compared to respective control groups.^[27]

4. Doorva (*Cynodon dactylon* (L.) pers.)

Cynodon dactylon (family – Poaceae) is known to be a tackler in Indian mythology and is offered to Lord Ganesha. It is found every where, even on waste land, road side, dry places and spread vigorously on cultivated ground. The sanskrit word durva literally means that which is cut or eaten by the animals. It is the most sacred plant of India next to Tulsi.

Doorva in Samhita Grantha

Charak Samhita

Acharya Charak has described Doorva in Varnya mahakashaya. Uses and references of the drug related to my topic are as.

Preparation	Indication	References
<i>Padyakadi Kwath</i>	<i>Raktapitta</i>	C. Chi. 4/67
<i>Sahasravirya lepa</i>	<i>Raktapitta</i>	C. Chi. 4/102

Sushruta Samhita

Acharya Sushruta has described Doorva as Pittasanshaman, Ropan and as Kumar rasayan.

Astanga Hridaya

Acharya Vagbhatta has described doorva as Pittasanshaman. Uses and references of the drug related to my topic are as.

Preparation	Indication	References
<i>Nagabaladi ghrita</i>	<i>Ojavardhak</i>	A. H. Chi. 3/120-125

Sharangdhara Samhita

Uses and references of the drug related to my topic are as.

Preparation	Indication	References
<i>Vrana shotha lepa</i>	<i>Shotha</i>	Sh. S. U. K. 11/82

Bhava Prakash

Uses and references of the drug related to my topic are as.

Preparation	Indication	References
<i>Durvadi Kwath</i>	<i>Prameha</i>	B. P. Chi. 38/54
<i>Durvandhya</i>	<i>Rakta pitta</i>	B. P. Chi. 9/32-36

Research Work on Doorva (*Cynodon dactylon*)

The plant extract checks uterine bleeding, strengthens the uterus, averts abortion and augments of foetal growth.^[28]

Ethanol extract of aerial parts of *C. dactylon* has also marked CNS depressant^[29] and antioxidant activities^[30]

The flavonoids present in the aqueous extract of this plant might be responsible for its marked antioxidant efficacy at tissue level in ST2 – induced diabetici rats.^[31]

Literature suggest that this plant is also a fresh remedy for anasarca, calculus, cancer, carboncle, convulsion, cough, cramps, cystitis, headache, Hypertension, kidney, rubella, urogenital, disorders, wound.

The ethanotic extract of leaves of *cynodon dactylon* (grass) is efficient, *Vibrio cholerae*, *Klebsiella* and extract showed higher activity than the given standard antibiotic.^[32]

Methanolic extract of *C. dactylon* has shown a promising effect in over coming & stress induced sexual dysfunction, sexual performance and semen concentration. Active constituent of *C. dactylon* present in methanolic extract have a potent aphrodisiac and male fertility activity.^[33]

5. Patala (*Stereospermum suaveolens* Dc.)

It is a large deciduous tree near Pampa lake described in Ramayan / Aranyakhandasarga 15/24. It is found through out India, growing in deciduous forest, slopes of hill, or evergreen forest.

PATALA IN SAMHITA GRANTH

Charaka Samhita

Acharya Charak has kept Patala shothahara gana of Kashaharadi varga. Charak has described the flower of Patala as Hridya, Vishada, and Sugandhyukta. The formulations as my topic are used in various diseases which nourishes given as follows-

Preparation	Indication	References
<i>Triushnadi ghrita</i>	<i>Gulma</i>	Ch. Chi. 5/66
<i>Mustadu churna</i>	<i>Kustha</i>	Ch. Chi. 7/67
<i>Triphalasava</i>	<i>Kustha</i>	Ch. Chi. 7/81
<i>Dashmuladya ghrita</i>	<i>Kshaya</i>	Ch. Chi. 8/93
<i>Mahapanchag</i>	<i>Apasmar</i>	Ch. Chi. 10/18-

<i>avya ghrita</i>		24
<i>Mulasava</i>	<i>Grahani</i>	Ch. Chi. 15/158

SUSHRUTA SAMHITA

Sushruta included Patala Aragvadi adi gana Vrihatapanchmuladi gana. The formulations as used in various diseases which nourishes my topic are given as follows.

Preparation	Indication	References
<i>Brihatpanchmula yusha</i>	<i>Vatavyadhi</i>	S. Chi. 4/13
<i>Kalyanak lavana</i>	<i>Vatavyadhi</i>	S. Chi. 4/32
<i>Bhulikadi Taila</i>	<i>Vtavyadhi</i>	S. Chi. 37/22
<i>Dashmuladi asthapana</i>	<i>Vatavyadhi</i>	S. Chi. 38/64
<i>Vrshadi asthapana</i>	<i>Vatavyadhi</i>	S. Chi. 38/67

ASTHANGA HRIDAYA

Acharya Vagbhatta included Patala in Shookadhanya varga. The formulations as my topic are used in various diseases which nourishes given as follows.

Preparation	Indication	References
<i>Bala Taila</i>	<i>Yoni Roga</i>	A. H. Sa. 2/52
<i>Agastya haritaki</i>	<i>Rasayan</i>	A. H. Chi. 3/127-132
<i>Sukumara Taila</i>	<i>Rasayan</i>	A. H. Chi. 13/41-47
<i>Dadhita ghrita</i>	<i>Vata roga</i>	A. H. Chi. 14/13-20
<i>Sahacharadi Taila</i>	<i>Yoni roga</i>	A. H. Chi. 21/67-69

Research Work on Patala (*Stereospermum suaveolens*)

Ethanol extract from the stem bark of *Stereospermum suaveolens* (Roxb.) DC (Bignoniaceae), given orally at the doses of 200 and 400 mg/kg body weight, was assessed for analgesic and antipyretic properties on different experimental animal models. Administration of ethanol extract of *Stereospermum suaveolens* (EESS) produced significant ($p < 0.05$, $p < 0.001$) dose-dependent analgesic effect in the tail flick, hot plate, and tail clip (central) as well as in acetic acid-induced writhing (peripheral) nociceptive tests in mice, suggesting the involvement of both central and peripheral mechanisms in alleviating the pain response. In the current study, indomethacin, aspirin, and morphine were used as the standard analgesic drugs. In addition, EESS also exhibited a significant ($p < .05$, $p < .001$) dose-dependent

antipyretic response in Brewer's yeast-induced pyrexia in rats and the results were comparable with that of paracetamol, a standard antipyretic agent. These results showed that the EESS possesses potent analgesic and antipyretic activity by dose-dependent manner, in various experimental animal models.^[34]

The Root Bark of plant *Stereospermum suaveolens* DC. Was traditionally used for the treatment of pains and inflammations. The present study was carried out using carrageenan-induced paw edema method in wistar adult rats.^[35]

6. Guduchi (*Tinospora cardifolia* Miers.)

The drug Guduchi is not described in Vedas but in parishista part of Atharva Veda, mentioned by the name of Amrita (Ath. Pari 5/15, 18/1/15-17, 21/3/3). Guduchi is described in Kalpa sutra and Paniniya Ashtadyayi by the name of Amrita. It was kept in houses to avoid the fear of snake and scorpion bite (Sh. 6/56), (P. U. Au 2/2/80).

Guduchi in Samhita Granth

Charak Samhita

Acharya Charak has kept Guduchi in Vayahsthapan, Stanya shodhan, Dahaprashaman, Trishna nigrahan Gana of Shoditasthapanadi, Stanya jananaadi, Dahaprashamanadi, Chhardi nigrahanadi, Triptagnadi gana respectively The formulations in my topic are used in various diseases which nourishes given as follows.

Preparation	Indication	References
<i>Guduchyadi Taila</i>	<i>Yonivyadad</i>	Ch. Chi 15/59-60
<i>Kashmiaryadi ghrita</i>	<i>Yonovyapad</i>	Ch. Chi. 15/53
<i>Pachanam kshara</i>	<i>Grahani</i>	Ch. Chi. 15/188
<i>Amritadya Taila</i>	<i>Vata vyadhi</i>	Ch. Chi. 15/159-163
<i>Vrishamuladi Taila</i>	<i>Vata vyadhi</i>	Ch. Chi. 15/170

SUSHRUTA SAMHITA

Sushruta included Guduchi in Patoladi, Kakolyadi, Shyamadi, Guduchyadi, Ballipanchmula, Aragwatadi gana. The formulations as my topic are used in various diseases which nourishes given as follows.

Preparation	Indication	References
<i>Triphaladi taila</i>	<i>Vata vyadhi</i>	S. Chi 37/33
<i>Shampakadi asthapana</i>	<i>Vata vyadhi</i>	S. Chi. 38/28
<i>Guduchyadi asthapana</i>	<i>Vata vyadhi</i>	S. Chi 38/47
<i>Bhadradi asthapana</i>	<i>Vata vyadhi</i>	S. Chi. 38/60

ASTHANGA HRIDAYA

The formulations as my topic are used in various diseases which nourishes given as follows.

Preparation	Indication	References
<i>Vasadi ghruta</i>	<i>Aruchi</i>	A. H. Chi3/164
<i>Sarvarogashak vasti</i>	<i>Sarvaroga</i>	A. H. Chi. 4/1-3
<i>Guduci Kwatha</i>	<i>Garbhasthapak</i>	A. H. Sa. 2/7
<i>Guduci Yoga</i>	<i>Garbhasthapak</i>	A. H. Sa. 2/56

Sharangdhar Samhita

The formulations as my topic are used in various diseases which nourishes given as follows.

Preparation	Indication	References
<i>Amritastaka Kwath</i>	<i>Aruchi</i>	Sh. S. M. K. 2/24
<i>Mustayaadi Churna</i>	<i>Vrishya</i>	Sh. S. M. K. 6/160
<i>Sanjivani Vati</i>	<i>Amrita</i>	Sh. S. M. K. 6/19-21

Bhava Prakash (16 th Cent A. D.)

The formulations as my topic are used in various diseases which nourishes given as follows.

Preparation	Indication	References
<i>Triyodashang guggul</i>	<i>Vata vyadhi</i>	B. P. Chi. 24/117-121
<i>Mahamashaadi</i>	<i>Vata vikara</i>	B. P. Chi 24/273-280
<i>Triphaladi ghruta</i>	<i>Yoni Dosha</i>	B. P. Chi 70/56-61

Research Work on *Guduchi* (*Tinospora cordifolia*)

The antioxidant capacity of *Tinospora cordifolia* stem methanol extract in daily oral administration of 500 mg/kg of body weight for 40 days in alloxan induced diabetic rats. The

erythrocytes membrane lipid peroxide and catalase activity was increased where as the activities of superoxide dismutase, glutathione peroxidase were found to be decreased significantly ($P<0.01$) in alloxan-induced diabetic rats.^[36]

Oral administration of 2.5 g and 5.0 gm /kg body weight of the aqueous extract of the roots for 6 weeks resulted in a significant reduction in the thiobarbituric acid reactive substance and an increase in reduced glutathione, catalase, and super oxide dismutase in alloxan diabetic rats.^[37]

Diabetic patients with foot ulcers on *T. cordifolia* as an adjuvant therapy showed significantly better final outcome with improvement in wound healing. Reduced debridements and improved phagocytosis were statistically significant, indicating beneficial effects of immunomodulation for ulcer healing.^[38]

7. *Haritaki* (*Terminalia chebula* Linn.)

Abhaya term is used in the sense of peacefulness in Atharva Parishista. Therefore in Grihyasutra and Dharam Sutra of after period it was used for Haritaki and 'Pathya' term was also used. In Atharva veda, the drug Rohani is indicated for healing of wound and bone fractures. In Ayurveda Vangmaya Rohini is one among the seven type of Haritaki. In Paniniya Ashtadhyayi and Vartika, it was described by the name "Haritaki".

Charak Samhita

Acharya Charak included harad in Prajasthapan, Kushtagna, Arshoghna, Kashaghna, Jwaraghna gana of Shoditasthapanadi, Truptignadi, Kashaharadi, varga respectively. Charak has described its best fruity dravya mainly used for virechan karma and used in Yoni Dosha and Shukra dosha by Virechana vidhi. Harad is the best strotas shodhak. The formulations as my topic are used in various diseases which nourishes given as follows.

Preparation	Indication	References
<i>Hingwadi churna</i>	<i>Gulmanashak</i>	C. Chi. 5/82-84
<i>Vyosadighrita</i>	<i>Gulmanashak</i>	C. Chi. 5/65
<i>Triphaladi Churna</i>	<i>Kushta</i>	C. Chi 7/68
<i>Kalyanaka</i>	<i>Unmaad</i>	C. Chi 9/36

<i>ghrita</i>		
<i>Takrarista</i>	<i>Grahani</i>	C. Chi. 15/120
<i>Triphaladi taila</i>	<i>Aparmar</i>	C. Chi 10/44
<i>Kashmaryadi ghrita</i>	<i>Yonivyapad</i>	C. Chi. 15/53

Sushruta Samhita

Sushruta kept it in *Mushakakadi, Vachadi, Parushakadi, Mustadi, Triphaladi, Amlakyadi gana*. The formulations as my topic are used in various diseases which nourishes given as follows

Preparation	Indication	References
<i>Tilvaka Ghrita</i>	<i>Vata vyadhi</i>	S. Chi. 4/
<i>Triphaladi Taila</i>	<i>Vata vyadhi</i>	S. Chi 37/33
<i>Pathadi Taila</i>	<i>Vata Nashak</i>	S. Chi 37/36
<i>Guduchyadi asthapana</i>	<i>Vata vyadhi</i>	S. Chi 38/47
<i>Kushadi asthapana</i>	<i>Vata vyadhi</i>	S. Chi38/51

Astanga Hridaya

The formulations as are used in various diseases which nourishes my topic are as follows.

Preparation	Indication	References
<i>Agastyaharitaki</i>	<i>Rasayan</i>	A. H. Chi. 3/127-132
<i>Vashistha haritaki</i>	<i>Rasayan</i>	A. H. Chi 3/136
<i>Chavikadi ghrita</i>	<i>Kshaya</i>	A. H. Chi. 3/159
<i>Kasamardadi ghrita</i>	<i>Shosha</i>	A. H. Chi. 3/162
<i>Triushnadi ghrita</i>	<i>Vataja gulma</i>	A. H. Chi. 14/21

Sharangdhar Samhita (13th Cent. A. D.)

The formulations as used in various diseases which nourishes my topic are given as follows.

Preparation	Indication	References
<i>Draksaadi kwath</i>	<i>Raktapitta</i>	S. S. M. K. 2/15
<i>Aragvadhadi kwath</i>	<i>Amadosh</i>	S. S. M. K. 2/23
<i>Maharasnaadi Kwath</i>	<i>Garbha Prada</i>	S. S. M. K. 2/88-94

Bhava Prakash

The formulations as my topic are used in various diseases which nourishes given as follows.

Preparation	Indication	References
<i>Siddharthakadi ghrita</i>	<i>Unmad</i>	B. P. Chi. 22/35-37
<i>Kalyanak churna</i>	<i>Apasmar</i>	B. P. Chi 23/21
<i>Mahayograj guggul</i>	<i>Rasayan</i>	B. P. Chi24/332

Research Work on Haritaki (Terminalia Chebula)

The use of *Terminalia chebula* in traditional medicine shows that the *T. chebula* is believed to be effective in relieving bacterial and fungal infection. So *T. chebula* was studied for the possible presence of anti microbial activities. Different fractions from fruits of *T. chebula* were screened for the antibacterial and antifungal activities.^[39]

anti-microbial activity of *Terminalia chebula* Retz fruit extract against microorganism. *Bacillus substils, Staphylococcus aureus, Staphylococcus epidermis, Escherichia coli, Staphylococcus flexineria* and *Pseudomonas aeruginosa*.^[40]

Antibacterial activity of *Terminalia chebula* Retz plant material, exhibited by its bioactive compounds, and serving them as an alternative antimicrobial agent against dental caries causing microorganisms.^[41]

8. Kutki (Picrorhiza kurroa Royle ex Benth.)

Picrorhiza kurroa is one of the major non-timber forest found in the Himalayas. It is one of the oldest medicinal plants traded from the Karnali zone. *Kutki* is a perennial herb and is used as substitute for Indian gentian.

Picrorhiza kurroa in Samhita Granthas

Charak Samhita

Acharya Charak has described *Kutki* in different *gana* as *Lkhaniya mahakashaya, Bhedaniya mahakashaya* and *Stanya shodhan mahakashaya*. Uses and references of the drug related to my topic are as.

Preparation	Indication	References
<i>Neelinyaadya ghrita</i>	<i>Gulma</i>	Ch. Chi 5/107-109
<i>Nagaradya Churna</i>	<i>Grahani</i>	Ch. Chi. 15/130
<i>Chandanadya ghrita</i>	<i>Grahani</i>	Ch. Chi. 15/128
<i>Rohinadya ghrita</i>	<i>Gulma</i>	Ch. Chi. 15/131

Sushruta Samhita

Acharya Sushruta has described Kutki in Pippalyadi, Mustadi and Patoladi gana. Uses and references of the drug related to my topic are as.

Preparation	Indication	References
<i>Madhukadi tailam</i>	<i>Anuvasana</i>	S. Chi. 37/27-29
<i>Mridaladi taiia</i>	<i>Anuvasana</i>	S. Chi. 37/30-31
<i>Padadi Taila</i>	<i>Anuvasana</i>	S. Chi. 37/36-38

Astanga Hridaya

Acharya Vagbhatta included it in Patoladi gana. Uses and references of the drug related to my topic are as.

Preparation	Indication	References
<i>Kasamardadi ghrita</i>	<i>Shotha</i>	A. H Sa. 3/162
<i>Chandanadi ghrita</i>	<i>Grahani</i>	A. H. Sa 10/41-44
<i>Nagaradi Churna</i>	<i>Grahani</i>	A. H. Sa 10/39-40

Sharangdhar Samhita

The formulations used in many diseases which nourishes my topic are as.

Preparation	Indication	References
<i>Katuphaladi Kwath</i>	<i>Pachana</i>	Sh. S. M. K. 2/12
<i>Parpatadi Kwath</i>	<i>Raktapitta</i>	Sh. S. M. K. 2/13-14
<i>Drakshadi Kwath</i>	<i>Rakta pitta</i>	Sh. S. M. K. 2/15

Bhava Prakash

The references containing a drug which nourishes as follows.

Preparation	Indication	References
<i>Vijaya churna</i>	<i>Vandhyatwa</i>	B. P. 5/66
<i>Astadashanga lauha</i>	<i>Raktapitta</i>	B. P. 8/55-57

Research Work on Kutki (Picrorhiza Kurroa)

Picroliv a standardised fraction from root and rhizome of Picrohiza Kurroa consisting of iridoid glycosides and shown to be responsible for its hepato protective activity. Picroliv enhance non specific immune response by an increase in macrophage migration index. [42]

In the last three decades, numerous biopolymeric fractions have been isolated from medicinal plants and used as a source of

therapeutic agents. The most promising biopharmacological activities of these biopolymers are their immunomodulatory effects. The biopolymeric fraction RLJ-NE-205 was isolated and purified from the rhizomes of *Picrorhiza kurroa*. [43]

The protective effect of picroliv (PIC) obtained from *Picrorhiza kurroa* (family: Scrophulariaceae) against hydrazine (Hz)-included hyperlipidemia was evaluated in rats. Hz administration (50 mg/kg, j. p.) caused an increase in triglyceride (TG), cholesterol (CHO), free fatty acids (FFA), and total lipids (TL) in both the plasma and liver tissue of rats accompanied by a fall in phospholipids (PL) in the liver tissue 24 h after its administration, indicating its hyperlipidemic property. The above abnormality was prevented by simultaneous treatment of PIC (50mg/kg, p. o.) with Hz. Hz treatment also caused in increase in the mobility of TG and TL from adipose tissue, and these results indicate that Hz administration could cause hepatic steatosis by nonhepatoellular factors (such as mobilization of depot fats). This effect was also prevented by simultaneous treatment of PIC with Hz. [44]

9. Bala (Sida cordifolia Linn.)

Picrorhiza kurroa is a well-known herb in Ayurvedic medicine. Although it shows antioxidant, antiinflammatory and immunomodulatory activities, it is most valued for its hepatoprotective effect. The rhizomes are widely used against indigestion problems since ancient times due to improper digestive secretions. Aim of this study was to explore antioxidant study of *P. kurroa* leaves for a new source of naturally occurring antioxidants. [45]

The plant name Bala is coined on the name of Parvati (Goddess of strength and beauty). Bala forms a group of four herbs. Maharshi Charaka has categorized Bala as Bramhaniya a bulk of promoting herb and as Balya tonic and promotes reproduction. Acharya Vagbhatta and Sushruta have cited it as Vatav Samghnana, pacifies the Vata dosha.

In vedic periods the roots of the Bala used in vatapitta diseases, heart problem, bile, blood, eg. diseases & uterine disorders.

BALA IN SAMHITA GRANTHA**Charak Samhita**

Acharya charak has described bala in Brahaniya, Balya, Prajasthapana gana of jiviniyaadi,

balyaadi, and shonithsthanadi varga respectively.

The formulations as my topic are used in various diseases which nourishes given as follows.

Preparation	Indication	References
<i>Baladi taila</i>	<i>Vatavyadhi</i>	C. Chi. 15/149-154
<i>Balataila basti</i>	<i>Yonivyapad</i>	C. Chi. 15/50-51
<i>Duralabhaadi ghrta</i>	<i>Ksathshin</i>	C. Chi. 10/100

Sushrut Samhita

Acharya Sushrut has described bala in Vidarigandhadi gana.

The formulations as my topic are used in various diseases which nourishes given as follows.

Preparation	Indication	References
<i>Rasayan yoga</i>	<i>Rasayan</i>	S. Su. Chi. 28/90
<i>Bhutikaadi taila</i>	<i>Vaatajavyadhi</i>	S. Su. Chi. 37/22
<i>Rasnaadi asthapan</i>	<i>Vataja yoniroga</i>	S. Su. Chi. 38/73

Astanga Hridya

The formulations as my topic are used in various diseases which nourishes given as follows.

Preparation	Indication	References
<i>Bala tail</i>	<i>Yoniroga</i>	A. h. Sa. 2/52
<i>Swadanstraadi ghrta</i>	<i>Kshya</i>	A. H. Sa. 3/102-105
<i>Nagabala ghrta</i>	<i>Aayusha</i>	A. H. Chi 3/120
<i>Daadhit ghrta</i>	<i>Vataroga</i>	A. H. Chi. 14/13

Bhava Prakash

The formulations as my topic are used in various diseases which nourishes given as follows.

Preparation	Indication	References
<i>Balaadi churna</i>	<i>Urakshat</i>	B. P. Chi. 11/62
<i>Mahamashaadi tail</i>	<i>Vatavikara</i>	B. P. Chi. 24/265
<i>Maharasnaadi kwath</i>	<i>Garbhsthapak</i>	B. P. Chi. 26/132
<i>Mula churna</i>	<i>Raktpradara</i>	B. P. Chi. 61/11

Research Work on Bala (Sida Cordifolia)

Sida cordifolia is Rasayana drug generally possesses strong neuroprotective and

antioxidant properties. The midbrain showed increased levels of TBARS and increased activities of superoxide dismutase and catalase. S triatum shows reduced levels of dopamine and its metabolites compared to the control. In the PD mouse, along with foot slippery errors, grooming, rearing, central and peripheral movements were found.^[46]

Antioxidant potential of ethanol extracts of *Sida cordifolia*. leaf, stem, root, and whole plant was studied. Anti-lipid peroxidation, free-radical scavenging, reducing power, nitric oxide scavenging, superoxide scavenging antioxidant assay, and further estimation of total phenolic content and HPTLC studies were carried out.^[47] Methanolic and aquatic extract exhibited more inhibitory activity on gramnegative bacteria than grampositive bacteria. Better fungul activity was observed with aquatic extract equivalent to fluconazole.^[48]

The analgesic activity was investigated in the acetic acid induced writhing and the radiant heat tail flick model in mice and the carrageenan induced rat paw edema model was used for anti-inflammatory study. The compound produced significant ($p < 0.01$) analgesic activity in both models. The compound also exhibited significant ($p < 0.01$) inhibition of rat paw edema induced by carrageenan. These results indicated that compound 1 possessed analgesic and anti-inflammatory activities.^[49]

10. Priyangu (*Callicarpa macrophylla* Vahl.)

The Priyangu is often referred as the syama or the phalini in Sanskrit. The Amarakosa lists a total of 14 Synonyms which gives a sense of how popular it was – most plants get three or four. In addition to the above, these are, mahila, lata, govindini, gundra, phali, visvaksens, gandha phali, karambha and priyanka. It can also be called Kanta or angana. According to the Pandanus Indian Plant Database, its botanical name is *Callicarpa macrophylla* which is more widely accepted.

PRIYANGU IN SAMHITA GRANTHA

Charak Samhita

Acharya Charak has kept priyangu in mutravirajniya, purishsang rahniya gana of purishsangrahiniya varga The formulations as my topic are used in various diseases which nourishes given as follows-

Preparation	Indication	References
<i>Uushiraadi</i>	<i>Raktapitta</i>	C. Chi. 4/73

<i>churna</i>		
<i>Kalyanaak ghrta</i>	<i>Unmand</i>	C. Chi. 9/36
<i>Bala taila</i>	<i>Vatavyadhi</i>	C. Chi. 15/149-154

Sushrut Samhita

Acharya Sushruta described priyangu in yalaadi, annjanadi, priyangaadi gana.

The formulations as my topic are used in various diseases which nourishes given as follows.

Preparation	Indication	References
<i>Daridranashak yoga</i>	<i>Rasayana</i>	S. Su. Chi. 29/14
<i>Gouchandanaadi yoga</i>	<i>Rasayana</i>	S. Su. Chi. 29/22
<i>Sthavarsneha</i>	<i>Vatanashask</i>	S. Su. Chi. 31/5
<i>Shampakadi asthapana basti</i>		S. Su. Chi. 38/28

Astang Hridya

The formulations as my topic are used in various diseases which nourishes given as follows.

Preparation	Indication	References
<i>Balaadi niruhan</i>	<i>Balya</i>	A. H. basti 4/5
<i>Sarvavatanashak tail</i>	<i>Yoniroga</i>	A. H. Chi. 21/73-81
<i>Hingvadi yoga</i>	<i>Grahabhutnashk</i>	A. H. BHUT. 5/3-7
<i>Sidharthak ghrta</i>	<i>Sarvagraha</i>	A. H. Bhut. 5/10-14

Sharangdhar Samhita

The formulations as my topic are used in various diseases which nourishes given as follows.

Preparation	Indication	References
<i>Parpatakaadi kwath</i>	<i>Raktipitta</i>	Sh. S. M. K. 2/13-14

Bhava Prakash

The formulations as my topic are used in various diseases which nourishes given as follows.

Preparation	Indication	References
<i>Sidhathakaadi ghrta</i>	<i>Unmand</i>	B. P. Chi. 22/35-37
<i>Mahacheatas ghrta</i>	<i>Vandhya</i>	B. P. Chi. 22/52-61
<i>Jambaadi tail</i>	<i>Updansh</i>	B. P. Chi. 51/43-46

<i>Phalaghrta</i>	<i>Garbhasya sthapak</i>	B. P. Chi. 70/56-61
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Research Work on Priyangu (*Callicarpa macrophylla*)

Ethanollic extracts of leaves of *C. macrophylla* were evaluated for their anti-inflammatory activity using carrageenan paw edema method using diclofenac sodium as standard. Results showed that ethanollic extract of *C. macrophylla* leaves have better anti-inflammatory profile than the aqueous extract and can be the choice to be used as anti-inflammatory drug. [50]

Ethanollic (SEE) and aqueous (SAE) stem back extracts of *C. macrophylla* against some gram positive and gram negative strains was oneusing Kirby bauer agar disc diffusion assay echniques. SEE, showed moderate growth inhibitory ctivity against all the bacterial strains, but SAE was exceptionally inactive against all strains except *Salmonella typhimurium*. The phytoconstituents inSAE might be responsible for the inhibition of *S.typhi murium* growth. [51]

Aqueous as well as ethanollic extracts of leaves of *C. macrophylla* were evaluated for their anti-inflammatory activity using carrageenan paw dema method using diclofenac sodium as standard. Results showed that ethanollic extract of *C. macrophylla* leaves have better anti-inflammatory profile than the aqueous extract and can be the choice to be used as anti-inflammatory drug[52]; and ethanollic root extract have superior anti-inflammatory spectrum than aqueous one. Results are highly promising and ascertain that roots of *C. macrophyllahave* anti-inflammatory potential, comparable to that of standards. [53]

DISCUSSION

Acharya Vagbhatta says "All the plants have a potential medicinal value, although in practice a plant is referred to as medicinal plant when it is so used by some system of medicine.

Hence we are having discussion on ten drugs of Prajasthapan Mahakashaya as described by Acharya Charak. Those drugs who help in conceiving by removing the uterine doshas/disorders are known as Prajasthapan. The properties of these drugs are Kashaya, Madhura, Sheeta, Snigdha and Balya.

In Vedic period also, scattered references are available, where infertility receives greater attention. The woman in considered as a field and Yoni is actual place of progeny.

The preparation of yoni before deposit of veerya to make it capable of achieving conception. Among various conditions of Stri roga, infection of reproductive system and infertility are main. The eradication of krimis, rakshas is advised which enter the garbhashaya and cause infertility or destruct the yoni or reach the reproductive organs and causes trouble.

In Upanishads and Kalpa sutras also female is described as a field. Greater importance of general health of couple, physical and psychological normalcy was given, as it is said that parents can only provide body to the progeny.

Keeping all this in view now the analysis of the drugs in light of the literature available in authentic Ayurveda as well as modern text and establishes the fact of the use of these drugs in infertility. The ten drugs of Prajasthapan are which are going to be discussed on the parameter of Vandhyatva on today's era.

As the opinion of Charak, abnormal dietetics and mode of life, abnormalities of artava and bija and causes or anger of god are the causative factors of all these twenty disorders of yoni by which the vayu gets aggravated and this vayu with holding pitta and slesma already vitiated due to their specific causes, reaches the region of yoni and produces various disorders which lead to infertility.

Due to non-acceptance of bija by vitiated yoni in various yoni vyapad and destruction of bija in artava doshas, the conception does not take place. Failure to achieve conception is infertility and causes are.

- (a) Yoni Pradosa, abnormalities of reproductive organs (Kshetra) - yoni vyapad/yoni arsa.
- (b) Beeja/Abnormalities of ovum.
- (c) Psychological abnormalities.
- (d) Abnormalities of diet and mode of life.
- (e) Abnormalities of atma and satva of embryo.

Yoni Vyapad : Now first we are going to take a look on the word "yoni" which refers to entire reproductive system ie. vagina, cervix, uterus endometrium and fallopian tube, can be included : subject of matter to be considered under this are already described earlier abnormalities of yoni, psychology, supra ark, diet of mode of life, coitus at improper time & loss of bala have been

included in the causes of delay in achieving conception.

Failure to achieve conception is infertility. Among imp factors rtu, Ksetra (healthy yoni, uterine passage), bija or sukra & sonita, normalcy of hridaya or psychology, properly functioning vayu abnormalities is anyone of these can cause infertility.

Due to non acceptance of bija by vitiated yoni in various yonivyapad & destruction of bija in artavadusti the conception does not take place. Now relating these diseases to the disorders known today in modern gynecology books.

All the twenty gynecological disorders if not treated properly cause infertility. These disorders do not occur without vitiation of vata, thus first all vata should be normalized.

If we see doses of yonivyapad mostly disorders occur due to vitiation of vata. Mostly drugs are vata shamak.

B. monnieri and C. asiatica which are said Medhya by prabhava and helps in reducing stress, anxiety and depression mainly as psychoactive drug and is said to be artavajanana, hridya. Therefore helps in treating acharana udavarta in nastartava. Due to its Vata-Kapha shamak, it is also helpful in artava dosa vitiated by vataj dosa particularly, even it can also help in asragdara as it is said anti anxiety, anti depressant, anti epileptic, antioxidant, spasmolytic and is pitta vardhaka. Active compound includes brahmine, herpestine, saponins, D-mannitol, betulic acid, bacosides A & B. Brahmin can enhance immunofunction by increasing immunoglobulin and same as C. asiatica which is kapha-pitta shamak, helps in asaraja, arajaska, pittala and slaismiki, pyometra ammenorrhoea and mostly properties are alike to B. monnieri and is said stanyajanana and stanyashodhan and mostly propoerties are alike to B. monnieri and is said stanyajanana and stanyashodhan and is vasodilator, therefore keep circulation of blood through uterus good and helps in prajasthapan, remove depression and stress which are the major factors affecting sexual desire and can cause amenorrhoea and hence affect fertility. Active compounds include asisaticosidses A & B, medicassoside, brahmosides etc. B. monnieri and C. asiatica as described by Nighantus (Bhava Prakash, Raj Ballabh, Ratnakar, Gan Nighantus) as Kashaya, tikta, Laghu and sheeta Veerya and is found near water ponds, leaf ovate, open at one side and in

C. asiatica leaves are small. According to Gangadhara, Brahmi is the shaka vishesha.

Asparagus racemosus is considered as a powerful rasayana, drug capable of improving physical health and strength and maintain youthfulness. It is well known for its effect on the female reproductive system. Being a rasayana, and rejuvenating herb its restorative activity beneficial in women complaint. It is mainly known for its phyto estrogenic properties. It is said vata-pitta shamak, therefore helps in udavarta, putraghni, acharana, aticharana, sandi, suchimukhi, vatagi, prakarna. suska, arajaska, asraja, pittala, oligomenorrhoea, hypofunctioning ovary. In all artava dosa satavari is beneficial. As it is galactagogue, antioxidant, immuno stimulant, aphrodisiac, diuretic, helps in anorexia, insomnia, antifungal, anti tussive, hypotensive. The active compounds are satavarin, asparagine-A in roots and sarsapogenin, sitosterol, stema sterol in aerial parts. By Nighantus (Bhava Prakash, Raj Nighantu) it is described as madhura, tikta, kashaya, guru, snigdha and sheeta veerya It is balya and rasayana.

Cynodon dactylon is pungent, bitter, fragrant, antipyretic, used in convulsion, calculus, cystitis, hypertension, kidney problems, wound etc. It is said to be kapha-pitta shamak, therefore helps in treating slaismiki and pittala, arajaska & asraja yoni vyapad rogas, and helps in asragdar, putipyu, endometritis, chronic pelvic cellulitis diseases which lead to infertility. The active constituents are tritacin oil, agropyrene, furfural, arunodin which leads to its stress coping activity, anti inflammatory, diuretic immunomodulator, anti microbial, urogenital activity. In nighantus (Raja and Raja Ballabha Nighantu) it is described as kashaya, madhura and sheeta veerya.

Stereospermum suaveolens (Patala) roots are bitter, astringent, cardiogenic, cooling, diuretic and tonic. It is tridosanashak, therefore used in all diseases which leads to infertility. It is said to be analgesic, antipyretic antioxidant, and antihypoglycemic. It is well hepatoprotective and neuro protective. It's bark is used in kernine, putraghni, endometriosis, carcinoma of cervix, excessive bleeding, oligomenorrhoea with general weakness where as flowers are used in pari-pluta, and vamini, kshinaartava and are said balya. The active constituents are lapachol, sitosterol, gum, sylscutellarcin dinatin. By nighantus (Raj, Dhanvantari, shodal nighantu) it

is described as tikta, katu and ushna veerya, flowers are madhura, kashaya, sheeta veerya and fruits are kashaya, madhura, guru, and sheeta veerya and are rakta pitta kapha and Rakta pitta vata nashak respectively.

Tinospora cordifolia (Guduchi) used as general tonic, in rasayanas to improve the immune system and the body resistant against infections. The roots are known for its antistress, antileprotic, and anti matarial activities. The stem for dyspepsia, urinary disease and tonic and is better cures jaundice. It is tridosha nashak, therefore helps in all disorders which leads to infertility. The anti stress and tonic properties was clinically tested and is anti inflammatory, more effective in acute inflammation, there fore used in pittala, sarvaja, upopulata diseases. As it is already said to be antibacterial, anti-microbial, anti-inflammatory, hepatoprotective, immunostimulant and anti-oxidant. The active constituents are tinosporin, columbin, verberin, diterpenoid, cordifolin etc. In Nighantus (Raja and Ratnagar) described Guduchi as Tikta, Kashaya, Guru and Ushna veerya. Leaves are laghu, rasayana and balya. satva is laghu and dhatu vardhak.

Terminalia chebula (Haritaki) is the king of medicine because of its power of healing. It is considered to destroy all diseases and at the same time promote tissue growth and health. It is rasayana, prevent ageing, restablish youth and strengthen life. It is tridosashamak, therefore cures all diseases and make women fertile and perevent diseases It is said to be antioxidant, anti bacterial, antifungal, antiviral, cardio protective immuno modulator. Its fruit has angiogenic activity. It decreases liver and heart lipid and also show anti convulsive activity. Active chemical constituents are tannic acid, gallic acid, quercetin, chebulagic, triterpenic acid. It nighantus (Bhava prakash, Ratnakar, Rajballabh, Madanpal) it is described as kashaya, katu, tikta madhura, ruksha, laghu and ushna veerya. It is rasayana and ayurvedhak.

Picrorhiza kurroa (kutki) is a potent immunostimulant, antioxidant, mudulates liver enzyme level, anti inflammatory action, anti allergic action and mild luxative. It is kapha pitta shamak therefore cures slaismiki, pittala, arajaska, asraja, chronic endometritis diseases. the active compound is kutkin, D-mnanitol, apocynin picroside II. It is said hepatoprotective, antiviral, anti cholestatic, and also has analgesic effect. In Nighantus (Bhava Prakash) it is

described as tikta, laglu, ruksha, katu, and sheeta veerya,

Sida Cordifolia (Bala) is a balya tonic and promote reproduction. It is a good rasayana herb, as it supplies essential nutrients and strengthen immune system. It is psychostimulant It is vata pitta shamak, therefore used in suska, udavarta, acharna, sandi, pittala, asraja, aligo memoshoea due to infection or weaskness and also in hypho functioning ovary, asragadar. The active coustitnents are ephedrine steroids, phytosterol, It acts as anti inflammatory, cardiotoxic, uterme tonic, analgesic, antifungal hypoglyceric. In Nighamtus (Raj, Raj Bollabh, Bhavprakash, vaidhya nighantu) it is described as madhura, snigdha, and sheeta veerya. Its fruit are kashaya, madhura, guru, and sheeta veerya and are stambhak, lekhanaya, pittakapha nashak and cures blood diseases.

Callicarpa macrophylla (Priyangu) is a sandhaniya and healing drug. It is vata pitta shamak, therefore cures suska, acharana, asraja, asragdar diseases and helps in conceiving. It act as anti-inflammatory, astringent and rejuvenating properties. The active constituents are betulinic acid, diterpine, flavonids. In Nighantus (Bhava prakash, Madanpal Raj nighantu) it is described as tikta, kashaya, and sheetaveerya. Fruits are madhura, kashya, guru and sheeta veerya, seeds said to be madhura, kashaya, ruksha, and sheeta veerya, Gandh priyangu is said to be same sheeta verya, sugandhit and is used in bleeding disorders and to purify blood and to eliminate toxins.

Hence in all the problems of kshetra, ritu, bija, hridya, the ten drugs are curing all perfectly.

Pathyapatha (Congenial and Non Congenial Articles)

Pathya

1. Lasuna is beneficial the woman using lasuna never remains infertile. (K. K. Lasuna kalp. Adh.)
2. Milk is beneficial, use of this helps in achievement of pregnancy. (K. Khil. 24/5)
3. Meat increases Sukra (artava) gives nourishment and helps in getting pregnancy to the woman. (K. Khil 24/)
4. Root of Vandhyakarkotaki, Langli, Katutumbi, Devadali both Brhatis, Suryaballi and Bhiruka are congenial.

5. Wearing of clothes and garland left over by the woman having son, bath with the water le ft over or flowing during the bath being taken by the woman having son and coitus during ritukala are beneficial.

Apathya

According to *Harita, Kaccara, Surana, Amla, Kanji*, Articles producing burning sensation (*Vidaha*) and *Tikshna* (pungent or sharpacting) things are contraindicated.

CONCLUSION

The objective of the present study entitled “an analytical study of Prajasthapan mahakashaya on Vandhyatwa with special reference to female infertility” is to analyse all ten drugs of prajasthapan mahakashaya to provide safe and better understanding of plants included in our study for treatment of infertility.

By summarising the whole work the following conclusion can be detected

1. The description of Prajasthapan Mahakashaya is totally authentic in today era.
2. Qualities of all the Prajasthapan drugs described in Ayurvedic literature are found fitted on the parameters of modern science.
3. All drugs are easily available even in today era.
4. Practical utility of Prajasthapanin present era has been established.
5. On the basis of Ayurvedic as well as modern fundamentals, after analyzing the above facts, efficacy of Prajasthapan Mahakashaya in infertility has been proved.
6. Lastly several pharmacological properties of Prajasthapan drugs are getting confirmed in modern studies and yet a lot more studies shall be required to get any definite mechanism of action of these as well as other Prajasthapan drugs.
7. It is suggested that a holistic approach is taken where by specific pharmacological action is not viewed in isolation and is rather investigated in its total in vivo situation.

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