

Decade-Wise Rasayana prayoga in Female Reproductive Health - A Conceptual study

Review Article

Krishika M^{1*}, Kashavva V Hiremath²

1. PG Scholar, Department of Rasayana Evam Vajikarana, 2. Reader, Department of Kayachikitsa, KAHER'S Shri BMK Ayurveda Mahavidyalaya, Shahapur, Belagavi, Karnataka, India.

Abstract

The existence of life on Earth is sustained by the act of reproduction. The ultimate blessing for a couple in their lifetime is to give birth to a healthy progeny, which is only possible by the union of healthy *beeja* in the favorable conditions of *Ritu*, *kshetra* and *ambhu*. Female reproductive health plays a key role in all these four factors. Good reproductive health ensures a female to have a satisfactory and safe sexual life both physically and mentally. *Rasayana prayoga* during the course of *dhatu utpatti* in *balya* and *madhyamavastha* helps to attain the *rasadi dhatu* at its supreme quality. *Acharya Sharangadhara* quotes that the development of certain bodily characteristics attained in its pinnacle in every decade of life, starts to decline gradually after that certain period of years naturally. *Rasayana* therapy administered in each reproductive stage of female life may improve her reproductive health qualitatively which intern helps them to prevent various common reproductive ailments from *balyatara avastha* (pre-menarche) to *Jara* (complications after menopause). In this article, an attempt is made to collect and analyze the relevant facts from *Samhitas*, contemporary textbooks and e-resources and tried to conceptualize the significance of administering decade-wise *Rasayana* in female for improving their reproductive health.

Keywords: *Decade-wise rasayana, Sharangadhara Samhita, Female reproductive health, Rasadi dhatus, Rasayana, Dhatu utpatti.*

Introduction

Acharya Sharangadhara, divided the entire life of an individual into ten decades and gives certain characteristics which will start to decline in the body after that particular decade(1). *Rasayana chikitsa* basically aims at achieving the formation of *rasadi dhatus* in its supreme quality(2). *Rasayana prayoga* particular to those decades, with appropriate mineral or herbal drugs helps in the formation of those characteristics in the best way. Previous works have been done on indicating certain *rasayana dravyas* to compensate the decade-wise loss of the characteristics.

This paper aims at correlating decade-wise features explained by *Sharangadhara* with appropriate features or milestones in the female reproductive life and to emphasize the importance of *Rasayana dravya prayoga* in that period and also to critically analyze the significance of those *rasayana dravya prayoga* in every decade.

Materials and methods

Decade-wise phenomenon is the unique concept of *Ayurveda* explained in *Sharangadhara samhita* and

Ashtanga hridaya, which briefs about the certain bodily characteristics that will start to decline in the body in those particular decades, as a process of *kalaja jara*. Very minimal literature is available regarding the *rasayana prayoga* in these decades for compensating that physiological loss. In this conceptualization an attempt is made to compare the whole reproductive life cycle of women with the decade-wise phenomenon by collecting references from various *Ayurveda* classics, literature works of contemporary science and e-resources. Then suitable *rasayana dravyas* are selected for maintaining or improving the female reproductive health in those decades on the basis of their *rasa, guna, veerya, vipaka, prabhava, karma*, and mode of action as per contemporary science.

Results

The data obtained is presented as Decade wise *rasayana prayoga* for female reproductive health in Table No.1 and Fig No.1 and List of *Rasayana* drugs with *Rasa panchaka* in Table No.2.

In *Sharangadhara Samhita*, the whole human life is divided into 10 decades and the features that will start getting *kshaya* are also explained. This article is based on correlating the concept of those features with the milestones achieved by a female in her whole life by mainly concentrating on her reproductive milestones. The co-relation made is conceptual made by the author and there is no reference available for the same.

* Corresponding Author:

Krishika M

PG Scholar,

Department of Rasayana Evam Vajikarana,

KAHER'S Shri BMK Ayurveda Mahavidyalaya,

Shahapur, Belagavi, Karnataka, India.

Email Id: dr.ayurvedha@gmail.com

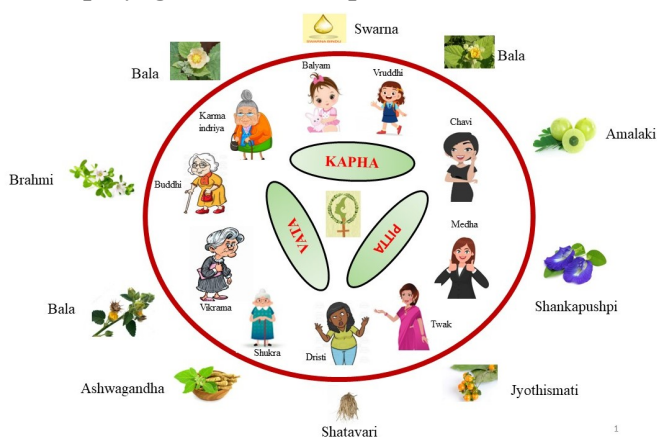
Table 1: Decade wise Rasayana prayoga for Female Reproductive Health

Decade	Years	Features	Reproductive Milestone	Desirable Rasayana
1st	1-10	Balya	Development of reproductive organs	Swarna
2nd	11-20	Vruddhi	Puberty, Development of Secondary sexual characters	Bala
3rd	21-30	Chavi	Pre-conceptional, Natal, Post-natal period	Amalaki
4th	31-40	Medha	Most sexually active period	Shankhapushpi
5th	41-50	Twak	Peri-menopausal, Pre-menopausal period and Menopausal period	Jyotishmati
6th	51-60	Drusti	Menopausal period, Post-menopausal period	Shatavari
7th	61-70	Shukra	Decline in the Sexual performance	Ashwagandha
8th	71-80	Vikram	Decrease in physical and mental strength	Bala
9th	81-90	Buddhi	Loss of cognition due to hormonal fluctuations	Brahmi
10th	91-100	Karma indriyas	Loss of voluntary movements of the body	Bala

Table 2: List of Rasayana Drugs with Rasa panchaka

Dravyam	Rasa	Guna	Virya	Vipaka	Karma
Swarna(12) (Aurum)	Madhura	Snigdha	Sheeta	Madhura	Medhya, Brimhana, Vrushya, Vishahara, Ruchya, Balya, Smritipada
Bala(24) (Sida cordifolia Linn)	Madhura	Snigdha Laghu Picchila	Sheeta	Madhura	Vrushya, Ojo Vardhaka, Brimhana, Balya, Rasayana, Kantivardhaka, Prajasthapana
Amalaki (28,29) (Emblia officinalis Gaertn)	Amla Pradhana Lavana Varjita Pancharasa	Ruksha, Laghu Sara	Sheeta	Madhura	Rasayana, Chardighna, Chakshushya, Keshya, Pramehagna, Vrushya, Vayasthapana, Varnya
Shankhapushpi(40) (Convolvulus pluricaulis Choisy)	Kashaya, Katu	Snigdha, Picchila, Guru, Sara	Ushna	Madhura	Vrushya, Smriti Vardhaka, Nidrajanaka, Rasayana, Medhya Kantivardhaka, Swarya
Jyotishmati(47,48) (Celastrus paniculatus Wild)	Katu, Tikta	Theekshna, Sara	Ushna	Katu	Medhya, Budhiprada, Agnivardhaka, Nadi Balya, Uttejaka
Shatavari(61-63) (Asparagus racemosus Linn)	Madhura Tikta	Guru Snigdha	Sheeta	Madhura	Rasayana, Medhya, Shukravardhaka, Balya, Stanyavardhaka, Vrishya,
Ashvagandha (68,69) (Withania somnifera Linn.)	Tikta,Katu, Kashaya	Laghu Snigdha	Ushna	Madhura	Rasayana, Shukrala, Balavardhaka, Balya, Brimhana, Kantivardhaka, Nadibalya, Vajeekarana, Vayasthapaka, Nidrajanaka, Vatahara
Brahmi(83,84) (Bacopa monneri Linn.)	Tikta, Kashaya, Madhura	Laghu, Sara	Sheeta	Madhura	Medhya, Ayushkara, Rasayana, Smriti Vardhaka, Indriya Prasadhana

Image No 1(Fig no 1): Decade-wise Rasayana prayoga in Female reproductive health.



Discussion

The physical, mental and spiritual health of a female is totally dependent on the well-being of *Tridoshas* and *Sapta dhatus*. The whole transitional changes in the female body occurring from *Balyavastha* (childhood) to *jaravasta*(old age) is caused by the dominance of doshas in the body which in turn causes changes in the composition of the *sapta dhatus* which will provide the appropriate support to the body(3). In childhood before attainment of puberty *kapha dosha* dominates, from puberty to menarche *pitta dosha* and when women attain menopause the *vata dosha* starts dominating thereby causing the *uttarottara dhatu kshaya*.(4) All together will lead to the progression of menopausal syndrome, which includes a broad spectrum of disorders, mainly caused by the imbalance in the level of circulating estrogen(5). The HPO axis

plays a major role in maintaining female sexual health both physically and mentally, which is a highly vulnerable factor for both internal and external entities. (6) The drugs selected for decade-wise *rasayana prayoga* are aimed to act in both the *prakruta* and *vaikruta avastha*. Thus helping to achieve the physiological milestone in a healthy way and to compensate the natural depletion with aging; without or with minimal hardships women may face with that concerned loss, the *rasayana* therapy as explained below can be followed.

Balyam

Childhood is the period where brain attains the major development (4-10 years).(7) This decade includes the transition period from childhood to till the attainment of puberty (development of the female reproductive system)(8). HPO axis plays a major role in the physiological development associated with higher centres of the brain, neuro transmitters and modulators responsible for the pulsatile release of hormones which helps in attaining menarche.(9) Many of the school going girls nowadays undergo precocious puberty (before 9 years of age)(10). This is due to the early maturation of the HPO axis, which may in turn cause to attain early menopause caused by premature ovarian failure.(11)

Administration of *Swarna* (12) (*Swarna prashana*) starts from the time of birth, as one among the *jatakarma samskara* (newborn care) till *Stanya utpatti*. In the same context the term '*Kumara*' has been mentioned which can be described as the children in whom the reproductive system is not yet completely developed(13). So *Swarna* can be administered throughout the process of development of the reproductive system. (14) The dosage can be decided with the help of Fried's rule(15).

Swarna as a *rasayana* (16) administered in *balya avastha* promotes healthy development of reproductive organs and regulates the HPO axis, (17) one of the prime factor for maintaining Female reproductive health, serves as the ideal choice of *rasayana* in this age.

Vruddhi

Vruddhi can be taken as both somatic and psychic development, a decade of attainment of physiological puberty and development of secondary sexual characteristics(18).

A female attains physiological menarche in this decade after then she will be called as *Rajaswala*.(19) This stage can be co-related with Gonardarche, a biological process that usually begins with the activation of the HPO axis. The process begins with the pulsatile release of GnRH from the hypothalamus, stimulating the production of LH and FSH from the pituitary gland,(20) causes maturational changes in the female gonads (ovaries), to produce gametes and development of secondary sexual characteristics(21).

As per Ayurveda classics, the ideal age for conception starts from 16 years(22). This can be evidenced that the ovulatory cycles usually commence 5

years after menarche.(23) *Bala* (24)having *Balya*, *brimhana* and *rasayana guna* promote *shareerika* and *manasika shakti* (25) for a female during this transition period, *vrushya guna* helps in the attainment of healthy conception by promoting normal sexual response (26) *prajasthapana guna* helps in strengthening uterus for achieving a healthy gestation and *ojovardhaka guna* promotes the overall health of the female. Women, who are matured enough both physiologically and psychologically will be able to bear the gestation in a healthy way, for this purpose *Bala* can be the ideal choice of *rasayana* for this decade.

Chavi

In the present era, third decade is mainly related to conception,(27) a stage in which the lustre of a female will be at its pinnacle.

Amalaki (28,29) having *Vrushya guna* helps in the regulation of hormones for reproduction and in natural conception; *chardighna*, *keshya* and *pramehaghna* properties help to normalize the conditions like vomiting, hair loss and diabetes during gestation.(30,31) *Rasayana prayoga* during this decade helps in the maintenance of the health of both mother and fetus.(32) *Amalaki*, as a *nitya rasayana*(33) enhances iron absorption and thus helps in the management of iron deficiency anemia. This drug is also one of the drugs prescribed for women in pregnancy.(34)

Amalaki rasayana helps improving the *pandutva* (pallor), *daurbalya*(weakness), *shirashoola* (headache), *shrama*(fatigue), and *gauravata* (heaviness) in pregnant ladies.(35) *Amalaki* has been proven to be effective in curing vaginal infections like candidiasis which is more common in females of reproductive age.(36) *Amalaki* which is described as *amruthavath*(elixir) can be the desirable *rasayana* in this decade.

Medha

Women of this age group are found to be more sexually active because in these years the chance for achieving orgasm is higher(37). The physical and mental health is more important to have a happy and satisfactory sexual life(38). The main hindrance for a comfortable sexual relationship is the prevalence of sexual dysfunctions, the prime reason for the incidence is *manasika nidanas* (psychological ailments) rather than that *shareerika nidanas*(39). *Shankhapushpi*, having *Smriti vardhaka guna* acts at the level of cognition; *kantivardhaka* and *swarya guna* acts on somatic features. *Vrushya* acts in both aspects mentally and physically by enhancing sexual competency. *Medhya* property, helps in normalizing the *manasika bhavas*, by arresting the production of stress hormones like adrenaline and cortisol(40) *Shankhapushpi*, the best among the *medhya rasayanas* is the ideal choice of *rasayana* in this decade.

Twak

This is the decade in which a woman comes to the verge of her reproductive age. Perimenopausal stages is approximately 1 to 10 years prior to menopause

(41) in which the ovaries start producing less amount of oestrogen due to poor ovarian reserve. Then 2 to 3 years just before attainment of menopause she enters into the premenopausal stage(42) in which the female exhibits mental disturbances like depression, anxiety, irritability, difficulty in concentrating, mood swings, anger, feeling overwhelmed, and other symptoms like fatigue, food cravings, and sleep disturbances due to the fluctuations of Serotonin, a neurotransmitter that maintains healthy mental status.(43) At this menopause stage dominating *vata dosha* leads to *dhatu kshaya* and in turn causes a reduction in *arthava utpatti* (menstruation) from the *rasa dhatu*(44) leading to menstrual disturbances. From contemporary view; oestrogen, the master hormone that helps in sustaining the physiological balance of the female body, regulates the body mechanisms through a network of oestrogen receptors.(45) Reduction of these hormone have some adverse effects on the skin lustre in females.(46)

Jyotishmati (47,48) root is effective in curing depression and various other neurological disturbances (49). Seed oil exhibits nootropic effects on cognitive impairment which is mainly due to chronic mental stress(50).

In this age, the incidence of vaginal infections is more(51). The plant extract has exhibited antifungal activity and antibacterial activity against *Staphylococcus aureus* which will help in the prevention and treatment of vaginal infections.(52) So *Jyotishmati* can be the choice of *rasayana* in this decade.

Drishti

This stage can be better correlated with menopausal and post-menopausal periods. (53) In this period, *vata dosha* dominates, causing the *uttara uttara dhatu kshaya* in the *shareera*. So the major function of dhatus i.e *dharana* of *shareera* will start to decline, leading to the manifestation of *swabhavika rogas*.(54) First the *saumya dhatu kshaya* occurs all over the body, which will lead to *vyadhi utpatti*. One such disease is Dry eye disease (DED).

DED is a multifactorial disease, more prevalent in menopausal and post-menopausal women(55). The prevalence is mainly due to the imbalance of sex hormones. Oestrogen influences the production of all components of the tear film including aqueous, lipid and mucin layer.(56) So, the decrease in the hormone levels alters the homeostasis of the ocular surface and results in DED. Common symptoms include foreign body sensation, irritation, pain, photophobia, stringy mucus in or around the eyes; itching, redness, and blurring of vision(57).

Post-menopausal disorders usually occur with dysregulation in the physiology of the brain, bone and lipid. The treatment for this oestrogen deficiency is hormone replacement therapy (HRT) which may lead to a broad spectrum of adverse reactions, like increasing the incidence of carcinoma of breast(58) and ovaries(59). Phytoestrogens can be an effective alternative therapy to HRT(60).

Shatavari (61,62) having *medhya guna*(63) helps in normalizing the mental agitation experienced by women in the post-menopausal period, *vrishya* and *shukravardhaka guna* acts as phytoestrogens, *netrya guna* acts in DED condition(64) and *rasayana guna* helps in the overall nourishment of the body.(65)

Shukra

This decade may be correlated to a stage in which a decline in sexual performance is observed(66). *Ashwagandha* is an adaptogen hormone balancer, which can calm down or boost energy depending on the requirements of individuals (67) and can be the ideal choice of *rasayana* in this decade.

Ashwagandha(68) having *balya* and *vaya-shapana* properties causes *dhatu pushti*, which acts as *samprapti vighatana* in the *swabhavika vyadhi janana* ultimately leading to *lakshanopashamana*. It helps to achieve sound sleep and acts as an anti-stress factor; *vajeekarana karma* nourishes the reproductive system by improving sexual dysfunctions. (69)

This plant has targeted action on the endocrine system, balances hormones and also increases circulation, which helps in reducing stress levels. (70) It has shown anti-inflammatory effects, which help in the body's natural healing mechanism against oxidative stress.(71) Cortisol levels can be reduced, which ultimately leads to anti-aging.(72) Its antioxidant property helps in reducing the oxidative stress in the brain(73); thereby increasing circulation and memory(74).

Vikrama

Vikrama hereby is indicated as the ability or the capability to do adventurous activities; that will be greatly decreased both physically and mentally in this decade. By the age of 70 years, there will be more loss in the bone mass in females when compared with males. (75) *Asthi kshaya* can be the result of *medo vrudhi*(76), *Bala* extract have shown hypoglycaemic property and is used to reduce excess unhealthy body weight(77). *Bala* is the ideal drug of choice which can be administered as a *rasayana* in this decade. It acts best in other age related problems like blood pressure, cardiac irregularity, osteo pathologies, colic and nervous disorders, Parkinson's disease(78) etc.

Buddhi

Many women complain of changes in memory and attention after menopause, because of the decline in concentration of circulating ovarian hormone.(79) Women on average spend one-third of their life in the post-menopausal years, in which aging influences the structure, function, and cognition of the brain.(80)

The action of the sex hormone on the brain is greatly dependent on the action of oestrogen receptors. At the cellular level, oestrogen facilitates synaptogenesis, protects against oxidative stress, and helps in regulating the activities of neuromodulators like serotonin, norepinephrine, dopamine, and acetylcholine(81). At the macroscopic level, sex hormones regulate the hippocampal volume. Thus,

manipulation of oestrogen levels leads to structural and functional modifications in ER-enriched regions in the brain that includes memory circuits(82).

Brahmi(83), a drug of *sangnyasthapana varga* can be an ideal choice of *rasayana* for this decade. *Brahmi* with its *sheeta veerya* and *madhura vipaka* promotes *prakruta kapha dosha* and enhances *dharana karma* of *buddhi* (retention of memory)(84). The active component of *Brahmi*, Bacosides have been proven to produce changes in the hippocampus, cerebral cortex, and hypothalamus parts and increase the levels of protein kinase action in these regions. This indicates that *Brahmi* has a positive influence on increasing neurotransmission and repairs the damaged neurons through enhancement of nerve synapse regeneration. (85).

Medhya rasayana group of drugs promotes the intellect (*dhi*), retention power (*dhriti*), and memory (*smriti*). They improve cerebral metabolism by producing neuro-nutrient effect. It enhances the mental performance by improving the *buddhi and manas* by correcting the disturbances of *manasika dhasas*(85).

Karma indriyas

After the orderly decline, *karma indriya kshaya* commences in this decade (voluntary movements). There are five *Karma indriyas* like *vak*(speech), *pani*(hand movement), *pada* (movement of lower limbs), *upastha* (genitals) and *paayu*(excretion)(86).

The individual will find it difficult to perform even their own day-to-day activities, leading to stress, the major cause for accelerating the rate of natural aging, which can be correlated with *ojo kshaya*(87). The herbal drug *Bala*, which is advised in the *vrudhi avastha* can be a choice of *rasayana* in this decade also, as its *madhura, snigdha* and *guru guna* help to reduce the *vata vrudhi*. *Ojo vardhaka* property acts against oxidative stress, *balya* and *brimhana* will provide strength to the *shareera* and helps in reducing the effects caused by *vata vrudhi* in the body.

The ultimate aim of human life is to achieve the four *Purusharthas* i.e., *dharma, artha, kama* and *moksha*(88). Without achieving these, the life is considered to be incomplete or non-fruitful. Maintenance of physical, mental, social, and sexual health is the base for achieving these components. Among these sexual health is the most sensitive area in medical science. Female sexual health is the rarest explored area in clinical research because of the lower incidence, which in turn is because of a lack of awareness and hesitation among the female population. The care for female reproductive health is a major concern which inspired as the basis for this conceptual compilation. Correlating the milestones of female reproductive health with the loss of decade-wise features is to throw light on the hidden importance of female reproductive health, and the benefits that a female can achieve indirectly by administering appropriate *rasayana* for that particular decade. *Rasayana dravyas* are mainly aimed at preventing the disease or can cure disease and help in *apunarbhava* of the *vyadhis*. Here in this article, an attempt is made to

explain scientifically the significance of decade-wise *rasayana prayoga* in female, to enhance their reproductive health in the present era.

Conclusion

The rationality behind selecting particular *rasayanas* is that the drug must act in both the ways preventive as well as curative aspects in that particular decade at both physical and psychological levels, as both should go in a balanced way to have a healthy reproductive life in females. Though specific *rasayana prayoga* is indicated in each decade, *Shatavari*, the queen of herbs can be the best choice of *rasayana* in almost every decade of the reproductive health of a woman. The dosage of the *rasayana* drugs said above can be decided by considering the *prakruti* and *satmya* of the individuals. Female reproductive health is the less explored field in Ayurveda in terms of clinical research. Many research papers are available on treatment aspects of female reproductive health and there is a lack of literary research materials on the preventive aspect of the same. This article is an attempt to emphasize the importance of *rasayana prayoga* in the female reproductive life cycle and further clinical studies can be encouraged for standardizing the same.

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