



Review article

Practical Significance of Rajaswala Paricharya in Modern Era

Dr. Laxmita Gaiju¹, Prof. Seema Shukla²

1 Assistant Professor, Dept. of Prasuti Tantra evum Stree Roga, NSU, Dang Nepal. 2 Head of Department, P.G. Dept. of Prasuti Tantra evum Stree Roga, RGGPG Ayurvedic College and Hospital, Paprola, Kangra, H.P.

Abstract

Ayurveda not only teaches about the concept of treatment of illnesses but also considers the wholesome concept of way of living a healthy and long life. The topic *Rajaswala Paricharya* has been described for delineating the code of conducts to be followed by a menstruating woman for maintaining the reproductive health in an optimum state and ensuring the production of a healthy progeny. In today's era of modernization, women are giving equal economic and professional contribution in a family and society. So, nowadays they have even more stress factors than before and are not being able to follow do's and don'ts for their health. Lifestyle and processed food consumption have been rendering hazardous impacts on reproductive health of women in the forms of altered menstrual cycles and conditions of subfertility. Similarly, in classics intake of inappropriate *Aahar-bihar* has been believed to be the cause for the development of various sorts of *Yonivyapad* and *Artavadushti*. *Rajaswala Paricharya*, thus has now been more important topic to be practically implicated for improvising the present health hazards in females. Diets and practices that are to be followed and contraindicated along with their possible logical interpretation will be sought out through this article.

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*Corresponding Author:

Dr. Laxmita Gaiju

Assistant Professor, Dept. of Prasuti Tantra evum Stree Roga, NSU, Dang Nepal

E-mail: gaijuluxmita11@gmail.com

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Introduction:

Menstruation is a monthly bleeding from the uterus which comes per vaginum for 4+/-2 days that occurs every 28+/-7 days during reproductive life and blood loss averaging 20-60 ml.^[1] It is a natural phenomenon that indicates the state of fertility in a woman. It occurs monthly due to shedding of endometrial lining that happens to proliferate during follicular phase of the month for the preparation for implantation of fertilized ovum and when fertilization fails to occur. *Ayurvedic* classics also defines the entire menstrual cycle as *Ritu Chakra* which further is classified into three phases, i.e. *Rajah kaal* or *Rajaswala kaal* (menstruation), *Ritu Kaal* (fertile period/proliferative phase including ovulation) and *Rituvyatita Kaal* (secretory phase/post-ovulation).^[2] Predominance of *Dosh* in these three phases has been mentioned. *Rajaswala Kaal* is mentioned to be *Vata* dominant as there is flow of *Artava* out of body under the influence of *Apana vayu*.^[3] Similarly, *Ritu Kaal* is *Kapha* dominant as there is replenishment and proliferation of endometrium in this phase showing the *Saumya* state of *Artava*.^[4] During *Rituvyatit Kaal*, after ovulation *Artava* remaining in *Garbhasaya* attains the *Agneya* property.^[5] Predominance of progesterone having thermogenic property manifested as increased basal body temperature of the body during the secretory phase also justifies dominance of *Pitta* in this phase. For a healthy reproductive health and regularized menstrual cycle, these bodily humors should be in their regular and balanced states.

Woman's life is classified into *Balawastha*, *Madhyamawastha* and *Vridhhawastha*. *Rajomati* includes women of age around menarche, i.e. 12-

16 years. Afterwards, fertile stage is the *Yuvati-awastha* (16-40 years)^[6], when female is at the most fertile state. In here if she follows the proper *Rajaswala Paricharya* as guided by the classics, she is expected to give birth to the healthy progeny. *Rajaswala Paricharya* has been discussed and included by different *Acharyas* in context of creation of healthy progeny by the woman. Today's need is to implement the classical references for *Rajaswala Paricharya* in practicality for the betterment of reproductive health of woman population and to sort out the existing disorders of menstrual health.

Mithyaahar vihar has been mentioned in the etiological factors of *Yonivyapada*.^[7] Similarly in etiological factors of *Astartavdushti*, intake of *Ati-ushna Annapan* ^[8] has been mentioned. On the other hand, excessive intake of *Lavana*, *Amla*, *Guru*, *Katu*, *Vidahi*, *Snigdha Dravya*, *Gramya*, *Audak*, fatty meat, rice, *Shukti*, *Dahi*, *Mastu*, etc have been mentioned in the *Nidan* of *Asrigdara* ^[9]. Hence all these facts clarify the significance of diet in maintenance of reproductive wellbeing of an individual. Hereby, diets and practices that are to be followed and contraindicated during *Rajaswala Kaal* along with their possible logical interpretation will be sought out.

Diets to be taken during *Rajaswala Kaal*

Acharya Sushruta has mentioned use of earthen dishes for serving food to the menstruating woman.^[10] *Rajaswala* period being a condition of *Raktadhatuksaya* as there is loss of blood during menses, body needs more of the macro and micro-nutrients in this state. Also, clay are highly porous in nature, such that it preserve the moisture of food and preserves almost all the micro-nutrients, taste and warmth present in the foods unlike the

modern utensils made up of aluminium, plastics having severe health hazards.^[11]

Earthen plates that are made up of clay are rich sources of earthen minerals like calcium, magnesium, phosphorus. Kaolin is the most commonly used clay which is chemically rich in Silicates (SiO_2), Aluminium oxides (Al_2O_3), Ferric Oxide (Fe_2O_3), Calcium Oxide (CaO), Sodium Oxide (Na_2O), Potassium Oxide (K_2O), TiO_2 .^[12] Clay are known to be slightly alkaline nature due to presence of these alkaline salts like Calcium oxides, Sodium carbonates, metal oxides such that food when kept onto utensils made of clay helps in providing alkaline minerals, neutralize the acidic reactive oxygen species causing oxidative stress during menses. Oxidative stress tends to occur during menstruation due to increased functions of angiogenesis, inflammatory reaction, phagocytosis, prostaglandin synthesis and so on.^[13]

During *Rajaswala*, there is loss of blood in the individual. When there is loss of *Rakta* from body, intake of light diets and *Agnideepak* foods has been advised so as to preserve the *Agni*.^[14] *Sushruta* advises *Havisya Anna* during menstrual cycle which is made by cooking of *Yava* or *Shali dhanaya* with milk and ghee. *Yava* is *Kashaya*, *Madhu ras*, *Katu Vipaka*, *Sheeta Virya*, *Mridu*, *Guru*, *Rukshya*, *Pichchhil Guna*, *Lekhana*, *Medhya*, *Agnivardhak*, *Balakar*, *Bahuvata Malakar*.^[15] As *Yava* does *Karshan* and increases *Vata*, little of ghee and milk is used to make *Havisya anna*. *Havisya* in total is easy to digest and helps in *Agnideepan*.

According to *Acharya Vagbhat*, intake of *Yaavak*, i.e. *Bhojan* made up of *Yava*, with milk should be given during *Rajaswala Kaal*^[16] for *Karshan* and *Koshtha Vishodhan* is indicated.

During menstrual cycle, lower levels of estrogen and progesterone hormones will subsequently cause decrease in the population of the intestinal microbiome. Such cyclical changes in ovarian hormones will alter small intestinal transit time, gastric emptying and mucosal blood flow. This justifies the bowel symptoms like constipation, loose motions, flatulence like GI symptoms occurring during the menstrual cycle.^[17] Lower population of the gut microbiome also decreases the Short Chain fatty Acids, hormones and neuropeptides that are secreted by the microbiome. These have significant role in influencing the Hypothalamic-Pituitary-Adrenal Axis and subsequently creates the state of anxiety and stress of the individual during the menstrual period.^[18] Hence, during this state of lowered activity of intestinal microbiome, foods favouring the microbiome, those containing pre-biotics and pro-biotics and easily digestible foods are to be given to the individual.^[19] As mentioned above, the *Havisya Anna* to be taken during *Rajaswala Paricharya* is easily digestible, prevents worsening of already weakened digestive condition of the individual during menses. These diets favouring the gut microbiome will help in regaining normal population of the gut microbiome. As gut microbiome plays significant role in increasing the bioavailability of activated estrogen by deconjugation of conjugated form of estrogen (as happens in liver) under action of β -glucuronidase secreted by the gut microbiome. Achievement of normal levels oestrogen after menses helps in attainment of the normal physiological processes.^[20]

Achara to be followed or not be done during *Rajaswala*:

Abstinence: During menstruation, *Acharyas* have

strictly indicated to follow abstinence. During menses, the vaginal mucosal lining is thinner ^[21] such that the women are more susceptible to infection. Having sexual indulgence during menses causes more friction and local injuries causing increased risks of infection. Unprotected vaginal intercourse during menstruation makes the risks of heterosexual transmission of Sexually transmitted diseases like HIV, Gonorrhoea, and Chlamydia higher. The ascending infection of vaginal pathogen will be higher due to loss of protective barrier of thick mucus plug during menses and dilated cervical os. Alkaline vaginal pH during menses hinders the natural microflora of vaginal epithelium and also facilitates the growth of pathogens. On the other hand, vaginal sexual intercourse during menses causes the contraction and relaxation of the reproductive tract. Such that there will be more chances of retrograde menstruation, thus contributing the development of endometriosis.^[22]

Divasvapna: During *Rajaswala*, already there is state of *Mandagni*. *Divasvapna* causes *Kapha* vitiation ^[23] which further causes *Mandagni* and formation of *Aama*. This causes *Aamaj* and *Kaphaj* diseases related to *Artava* thus affecting the menstrual cycles and consequently the reproductivity of the woman.

Anjan (Application of corylium): Application of *Anjana* has been contraindicated during menstruation or it will cause blindness in progeny. In conditions of *Mandagni* like after *Samsodhan* or during *Ajirna*, *Anjan* has been contraindicated.^[24] *Rajaswala* being a state of *Agnimandya* itself, use of *Anjana* during menses will cause obstruction of the *Srota* such that there will be improper nourishment of *Rasaadi Dhatus* and causes congestion and pain

during menses.

Snaan (Bathing): *Snaan* with *Sheeta Jala* causes *Raktastambhak* effects.^[25] Similarly, *Snaan* with cold water may also lead to aggravation of *Vata* and *Kapha Dosha*. These factors will lead to *Srotodush-ti* of *Artavavahi srotas*. Thus, causes hindrance in the proper flow of menstrual blood during *Rajaswala*. Improper or incomplete evacuation of menstrual blood causes various menstrual disorders. Also, head bathing during *Rajaswala* causes *Vata* vitiation in the *Shiropadesh* causing disturbance in HPO-axis, disturbing the regular hormonal flow pattern. Also, if bathing is done with hot water, this will cause *Pitta* vitiation causing increase in blood flow during menses.^[26]

Abhyanga (Application of Oil): *Abhyanga* is contraindicated in the state of *Ksheenawasatha* of *Dhatus*. Also, menstruation is a condition of weakened *Agni*.^[27] So, use of any kind of *Snehan* will lead to *Abhisyanda* and *Srotodushti*. Thus this may also cause *Artavavaha Shrotodushti*. Hence, it can cause alterations in the menstrual cycle.

Ashrupaṇ (Crying): Avoidance of crying during menses refers to escaping state of stress. Women under constant level of stress causes increased level of cortisol (pathological). A study showed that during early follicular phase, i.e. during menses, there are decreased levels of oestrogen and progesterone, which causes increased cortisol responsiveness and impairing effects of cortisol on emotional memory (physiological).^[28] Hence, any kind of stress triggering factors are to be avoided during *Rajaswala kaal*. Harboursing good thoughts during this period helps in maintaining the mental stability.

Excessive running, talking, laughing or hearing loud voices: All these also cause the vitiation of

Vata during *Rajaswala*. Hearing of loud voices may be contraindicated so as to ensure peaceful state of mind during menses.

During menses, the levels of estrogen and progesterone are in lower levels. A meta-analytical study showed the circulating cortisol level changes dynamically as a function of menstrual cycle phase. This suggests that cortisol is specially essential during the early follicular phase (physiological) to compensate the physiological changes in response to the environmental factors. The interplay between the HPA and HPO axis has been defined. Stimulation of ER- β in certain part of brain results in reduced production of CRH and ultimately decreased cortisol level [29]. Decreased levels of estrogen during early follicular phase will contribute increased levels of cortisol. Cortisol being a hormone triggered by consistent stress, all of the acts including crying, talking or listening to loud noises, excessive running, physical activities, talking mentioned above are also conditions initiating state of stress (pathological). Such that the individual will be even more vulnerable to the state of unstable mood states when in menses.

Similarly, when an individual is under any kind of physical or psycho-emotional stress, there is activation of HPA axis. Evidence has been seen in increased levels of cortisol and also LH levels after any sorts of stress conditions. Increased levels of LH or premature LH surge following stress will have immature follicles not to ovulate, such that there will be no ovulation or improper functions of the corpus luteum or irregular luteinization of granulosa cells. [30] Hence, any sort of stress during menses will thus may cause premature LH surge, anovulation and hormonal differences in the individual manifested as irregularities in menses, infertility or

early pregnancy in subsequent pregnancies.

Also during menses, there is decreased level of serotonin. Research has suggested that there is inevitable interplay between the serotonergic and gonadotropic steroid hormones. Estrogen is found to decrease the activity of degrading enzymes, i.e. MAO enzymes of neurotransmitters (like serotonin). Also it alters the expression of serotonin receptors in certain areas of brain. All of these verifying the interplay between the estrogen and serotonin. [31] Lower levels of estrogen during menses will thus also decrease the levels of serotonin. Serotonin as is considered to regulate the state of happiness, cognition and irritability. Lower levels of serotonin makes the individual more prone to mood swings, anxiety, eating disorders, irritability and depression during menses where there is huge hormonal alterations.

Lying in *Darbha* grass mattress:- *Darbha* is considered as an auspicious grass in Hindu Mythology. It is believed to absorb negative energies from body. *Darbha* has *Madhur*, *Kashaya Ras*, *Laghu*, *Snigdha Guna*, *Madhura Vipaka*, *Sheeta virya*, *Tridoshaghna*- especially *Pittahar* properties, *Stambhak* properties [32].

Maharshi Kashyap contraindicates *Nasya* and *Vaman karma*. [33] In *Rajaswala*, there is condition of *Dhatukshaya*, hence any kind of *Samsodhan karma* causes even more vitiation of *Doshas*.

Furthermore, all the aforementioned points if not kept in mind during *Rajaswala* will cause harm or congenital deformities in upcoming progeny. *Acharya Sushruta* has explained following deformities if a woman doesn't follow *Rajaswala Paricharya* which has been tabulated below as follows:

Table no.1: Effect of restricted Charyas on Progeny thus conceived ^[34]

S.N.	<i>Restricted Charyas</i>	Abnormalities in child
1	<i>Divasvapna</i>	Over Sleepy
2	<i>Anjan</i>	Blindness
3	<i>Rodana/Weeping</i>	Abnormality in vision
4	<i>Snaan</i>	Saddened
5	<i>Abhyanga</i>	Kustha/Leprosy and other skin disorder
6	<i>Nakhachhedan</i>	Kunakhi/Deformities of nail
7	<i>Pradhavan/excess Running</i>	Chanchal/mentally and physically unstable
8	<i>Hasana/Laughing</i>	Black discolouration of Teeth, lips and tongue.
9	<i>Atisabda sravan/loud noise</i>	Deafness
10	<i>Pralap/over talking</i>	Over talkative
11	<i>Avalekhan/Combing</i>	Baldness
12	<i>Marut,aayas sevan/ exposure to Breeze and exertion</i>	Mentally disabled
13	<i>Nasya</i>	Menstrual disorders

Acharya has mentioned if in case the woman doesn't follow celibacy and happens to conceive during Rajaswala kaal, there will be effect in the child as follows: Although the chances of pregnancy during unprotected menstrual sexual contact are very small, they do not completely disappear. This occurs because sperm can survive within the woman's body for a few days; upto 5 days ^[35] and in the case of premature ovulation (e.g., short menstrual cycle of 21 to 24 days), can cause pregnancy, which is undesirable most of the time.

Table no.2: Effect on child according to the day of impregnation ^[36]

Menstrual day of impregnation	Effect on the child
First day	No pregnancy/conception if happens, IUD/ Still birth/ neonatal death
Second day	Either abortion/IUD/Still birth/ neonatal death
Third day	Deficient or defective body parts or Alpayu
Fourth day	Healthy, normal, with all normal body organs and parts

After proper observance of *Rajaswala Paricharya*, on fourth day of menstruation, the woman should bath, follow the *Mangalacharan*, should use garlands, ornaments and new clothes and try to conceive on the fourth day. When the woman will conceive in the fourth day, the child thus conceived will be healthy, with optimum mental and physical features.

Discussion:

Artava that is collected in *Garbhasaya* throughout the month by the supply of *Artava vahnisira* and *dhamanis* is cleaned out of body during *Rajaswala Kaal*. *Artava* if not properly cleared out of body, this may lead to formation *Aama* related conditions. Hence, *Rajaswala kaal* can be considered as a natural phenomenon of *Shodhan*. Therefore, there is state of *Dhatukshaya*, *Agnimandya* and *Vata* predominance. However, in present scenario, women have been active in social as well as professional aspects. All the do's and don'ts that have been mentioned in classical references under the *Rajaswala Paricharya* can't be fully implemented.

Nowadays, menstrual hygiene has been focused amongst the population. Usage of sterile, clean pads, tampons, menstrual cups are in practice. Changing the pads frequently, i.e. every 6 hourlies, keeping the intimate hygiene properly, intake of proper nutritious diets, avoidance of sedentary lifestyle, strenuous activities, stress factors and having proper rest and sleep during menstruation are to be considered. Improper usage of tampons and menstrual cups may cause conditions like Toxic Shock Syndrome ^[37]. Hence, an individual using such menstrual products cautiously be maintaining hygiene.

Along with all these considerations, some of the aspects that are included in *Rajaswala Paricharya* are also practicable. These may be the intake of *laghu aahar* like *Havisya anna*, avoidance of strenuous activities, proper implication of abstinence, avoidance of *Divasvapna*, *Shodhan karma*, avoidance of stress state etc. These can be incorporated with implication of healthy behavioral aspects like maintenance of menstrual hygiene, proper supplementation of nutritious diets, daily practice of yoga asanas, physical activities. Recently a study was conducted among healthy female volunteers, showing that application of *Rajaswala Paricharya* for even 3 consecutive cycles manifested improvement in associated symptoms like painful menses, mood swings, pimples, breast tenderness, bowel alterations etc *Rajaswala Paricharya*.^[38]

Ultimate goal of implementation of aforementioned *charyas* will ascertain the optimum state of reproductive health and thus achievement of healthy progeny.

Menstruation is a condition of bleeding and tissue loss followed by a period of repair and regeneration. Hence, endometrium undergoes repetitive cellular division and angiogenesis during this phase. Any kind of foods taken or behaviours or practices like environmental factors exposure during menstrual period are contemplated to have epigenetic influence on the regenerating endometrium.^[39] This determines the fate of reproductive function, development of reproductive dysfunctions like endometriosis or menstrual disorders.^[40] Similarly, such alterations in endometrial proliferation alter the endometrial receptivity and nutrition of the fertilized ovum if fertilization happens to occur. Concept of "Developmental Origins of Health and Diseases" justifies different environmental exposures can lead

to various kinds of epigenetic modifications in the individual or the progeny thus conceived. Hence, period of regeneration following menstruation creates the window of susceptibility for such epigenetic alterations. ^[41] The phenotypic expression of a genotype is influenced and altered by the environmental factors as most of the cells or organs have plasticity phenotypically.

Similarly, western diets have high levels of unsaturated fats instead of carbohydrates. Higher the intake of the fatty diets, sedentary lifestyle causes obesity. Obesity causes disturbed levels of estrogen, androgens and state of anovulation, such that there will be subsequent conditions of menstrual irregularities, insulin resistance and infertility. Similarly, intake of high carbohydrate diets (glucose, sugary diets), high fatty diets (saturated fats), high animal based protein diets (red meats), that are the basis of today's junk food trends all causes increased oxidative stress. Intake of these foods during menses will cause even more of increased state of oxidative stress as already mentioned that oxidative stress being raised during menstruation. Increase in oxidative stress causes increased cellular injury, inflammatory response, decreased insulin sensitivity, healthy cell apoptosis. These will subsequently also affect the healthy germ cells of ovaries and endometrium. Ultimately these may be having deleterious effects in reproductive health of the individual. ^[42]

Intake of caffeine rich diets and beverages like coffee, chocolates, beverages, etc has shown alteration in reproductive hormones; serum levels of Prolactin has been found to be reduced in healthy non-pregnant women. This ultimately has been found to be having inhibitory effects upon

ovulation or function of corpus luteum. ^[43]

On the other hand, smoking and alcohol has also been noticed have deleterious effects in reproductive health of an individual. Cigarette smoke contains of mutagens and carcinogens like citinine and benzoapyrene having negative impact on follicular development, ovulation, oocyte retrieval, transport of gametes in the tubes, fertilization and embryogenesis. ^[44]

The use of mobile phones and wireless networks has become an integral part of our lives. In particular, the development of smartphones and 3G internet technology has led to an increased exposure to radio frequency electromagnetic fields. Data about this topic are not robust and a clear correlation has not been established between the use of cell phones and wireless networks and fertility parameters. ^[45]

EMF have shown adverse effects on granulosa cells, numbers of ovarian follicles, endometrial tissue, oocyte and embryo quality, and even changes in fetal heart physiology during pregnancy. Morphological alterations observed in the oocytes indicate the cytotoxic effect of EMF. Researchers have suggested that EMF exposure may disturb normal folliculogenesis. ^[46]

Rajaswala paricharya forms an integral part to pre-conceptional measure for attainment of healthy progeny. The nutritional, emotional, hormonal, physical and metabolic state of the female during menses and fertile period greatly affects the process of ovulation, quality of *Beeja* thus produced, process of fertilization, endometrial receptivity, implantation and growth and nourishment of the fetus, structural and physiological programming of the offspring. It also may determine the

regulation of organogenesis of the embryo thus conceived. Evidences of alterations in embryo was seen in female having starvation during conceptional or pregnancy period.

Conclusion:

Rajaswala Paricharya plays a significant role in avoidance of menstruation related disorders and associated symptoms when followed properly. Even though all of the points are not practicable, many aspects are logically and practically implacable in present circumstances also. Main aim of *Rajaswala Paricharya* is to avoid vitiation of *Vayu*, (esp. *Apana Vayu*) and formation of *Aama* conditions. Thus, in above mentioned ways, *Rajaswala Paricharya* helps an individual to cope up with all physiological and emotional changes that comes throughout the menstrual cycle. Thus it will help the individual to prepare for a healthy reproductivity and procreate a healthy progeny. Also health of the individual will be maintained in an optimum state.

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