



# Physiological and Psychological Changes Occurring during *Rutuchakra* - An Observational Study

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## ABSTRACT

**Introduction:** Menstrual cycle is a physiological periodic process occurring in women for most part of their lifetime. It is of paramount importance that the *Stree* is in good health not only for her own well-being but also for the well-being of the impending offspring. It is also important that *Stree* is prone to health risk if there is imbalance of *Doshas* in her body. Similarly, the quality of *Artava* also determines the health of the menstruating *Stree* and if there is any imbalance then the same may result in *Artavakshaya* or pathological conditions like dysmenorrhea, menorrhagia etc., **Objectives:** To find physiological and psychological changes occurring during *Rutuchakra* based on a sample study of 210 individuals and to interpret the results obtained with respect to Ayurveda. **Methodology:** Elaborate questionnaire (objective questions) is used in 210 healthy menstruating women between the age group 14-45 years for the study from wide strata of society, the main criteria of assessment is physiological and psychological impact during different phases of *Rutuchakra*. **Observation:** Based on the Study, it is found that there is **overarching prevalence of Vata Dosha** during *Rajahsrava Kala* (menstrual phase) which lead to symptoms like low back pain, abdominal pain, muscle cramps, general malaise. During *Rutukala* (ovulation) there is **overwhelming predominance of Kapha Dosha** which displays *Rutumati Lakshanas* such as enthusiasm, high level of alertness, improvement in skin texture cutting across all age groups. Finally, it is found that there is **predominance of Pitta Dosha** during *Rutu Vyateeta Kala* (pre-menstrual) wherein the women experience heightened anxiety, confusion and facial skin eruptions etc. **Conclusion:** Women during *Rutuchakra* face tremendous difficulty in coping with the physiological and psychological changes. During *Rajahsrava Kala* women display profuse intensity of low back and abdominal pain due to inherent predominance of *Vata Dosha*, *Rutukala* period is the most productive (enthusiasm) phase due to inherent predominance of *Kapha Dosha* and during *Rutuvyateeta Kala* there is predominance of *Pitta Dosha* which resulted in anxiety, malaise, sleep disturbance etc.

**Key Words:** *Rutuchakra*; *Rutu kala*; *Rajahsrava Kala*; *Rutu vyateeta kala*

## INTRODUCTION

Menstrual blood is known as *Artava* or *Raja*. This gets accumulated in the uterus and gets discharged as menstruation during each cycle<sup>1</sup>. The cycle

varies between 28 to 30 days. *Rutuchakra* comprises of three phases viz., *Rajahsrava Kala*, *Rutukala* and *Rutuvyateeta Kala*<sup>2</sup>. During these phases all the three doshas viz., *Vata*, *Pitta*, *Kapha*



play an important role in varying degrees of proportion. Vata Dosha determines Rajasrava Kala due to Vata Prakopa Avastha<sup>3</sup>. During this period Apana Vayu is responsible for elimination of Rajas<sup>4</sup>. Imbalance in hormones collapses the corpus luteum thereby shedding the endometrium along with its exudates. Meanwhile during the same period heightened increase in FSH in the ovaries stimulates the growth of multiple follicles. While menstruation ceases follicular growth continues until FSH level drops resulting in the maturation of one dominant ovarian follicle<sup>5</sup>.

Kapha Dosha determines Rutukala due to Kapha Prakopa Avastha<sup>3</sup>. Abundance of hormones like estrogen and progesterone during this phase determines the regeneration of endothelial vessels in the uterus. Increase in high level estrogen; decrease in FSH and heightened production of LH causes the dominant ovarian follicle to increase in size which eventually leads to a matured egg releasing from the ovary. Prostaglandins and proteolytic enzymes are increased with relation to LH and progesterone and also on the other hand estrogen level falls dramatically before the LH level peaks<sup>6</sup>.

Pitta Dosha determines Ritu Vyateeta Kala due to Pitta Prakopa Avastha<sup>3</sup>. During this period there is turbulence in both mind and body due to decrease of FSH and LH in the body<sup>7</sup>. It is also to be noted that nature of the individual or Prakriti determines the quality of her menstruation. For e.g. a Stree who is of Vataja Prakriti is more likely to display symptoms of menstrual problems because of her inherent Prakriti.

During each phase of the Rutuchakra the women needs special care for the well-being of her health. Ayurveda prescribes certain parameters to be followed during Rajasrava Kala and the same is called as Rajahswala Paricharya<sup>8</sup>.

## AIMS AND OBJECTIVES

1. To observe physiological and psychological changes occurring during Rutuchakra based on a sample study of 210 healthy individuals.
2. To interpret the physiological and psychological changes in the study with respect to Ayurveda.

## MATERIALS AND METHODS

Materials: Questionnaires were prepared (form of present or absent) into three segments as under:

- Rajasrava Kala: Questions were asked as to
  - Body pain, low back pain, abdominal pain, headache, nausea/vomiting, appetite variations, bowel movements, hot flushes, sleep disturbances and lethargy.
- Rutukala: Questions comprised of – watery vaginal discharge, lightness of body, changes in complexion of skin texture, enthusiasm, calmness of mind, work efficiency, food cravings, affability of opposite gender and likeness for soothing scents.
- Ritu vyateeta Kala: Questions comprised of – fatigue and body weakness, breast tenderness, constipation, acne/pimple eruptions, anger and irritability, depression, difficulty in concentration and disturbed sleep.



Study design:

It is a cross sectional study with healthy individuals selected from wide strata of society with varying demography. Healthy individuals (table 1), 210, of 14 to 45 age groups volunteered for the same and they were interviewed personally with their full consent.

**Table 1** Age, Bleeding duration and Quantum of flow

Particulars	Number of individuals	Percentage
<b>Age between</b>		
<b>I.14-24 years</b>	107	51%
<b>I.25-34 years</b>	73	31%
<b>I.35-45 years</b>	30	18%
<b>Number of bleeding days</b>		
<b>I.7 days</b>	17	8%
<b>I.5 days</b>	159	76%
<b>I.3 days</b>	34	16%
<b>Quantum of flow</b>		
<b>I.Normal</b>	165	81%
<b>I.Increased</b>	36	15%
<b>I.Decreased</b>	09	4%

Each questionnaire was provided with objective questions (yes or no) and sufficient time was allotted to answer each question. They were also allowed to ask clarifications if any doubt arises. The results obtained were collected and tabulated using statistical tools of 'cross tabulation and descriptive statistical analysis' as per the symptoms exhibited.

**Inclusion Criteria:** Healthy menstruating women in the age group 14-45 years who have menstrual cycle ranging between 26-34 days and a bleeding period of 3-7 days.

**Exclusion criteria** - Individuals who have Secondary dysmenorrhoea, pregnant and lactating mothers, morbidities like diabetes and hypertension were excluded from this study.

## OBSERVATIONS

The following data was obtained from 210 individuals:

## DISCUSSION

### Pre-Menstrual Phase

Both physiological and psychological changes were observed during this phase cutting across all age groups. Because of the secretory phase there occurs transformation of *Purana Raja* to *Navina Raja* due to the primordial role of *Pitta Dosha* in the *Garbhashaya*<sup>9</sup>. Therefore, preeminence of *Pitta Prakopa* and also *Pitta* is correlated to *Agni*<sup>10</sup>, individuals exhibited high level of food cravings (see table no.2) along with increased secretion of digestive juices (imbalance in *Samana Vata*) which resulted in abdominal bloating and additionally manifested in generalized malaise, generalized swelling of the body, fatigue, breast tenderness and heaviness of the body. Further decreased levels of hormones like estrogen and progesterone is shown to significantly impact *Bhrajaka Pitta*<sup>11</sup> thereby increasing *Ushnatva* resulting in acne and skin pigmentation changes. After the end of ovulation period, corpus luteum breaks down triggering fluctuations of hormones and directly impacting the neurotransmitters in the brain especially 'serotonin'. Most of the behavioral and psychological changes can be attributed directly to this. Decline of progesterone is said to have a direct impact on the level of serotonin in the brain. Also, when the corpus luteum breaks down there is decline in the



hormones-progesterone and estrogen<sup>12</sup>. Imbalance in *Sadhaka Pitta* and aggravated levels of *Prana vata* (which affects the nervous system) can be attributed to sadness, loneliness and difficulty in concentration, disturbed sleep, irritability, aggression/anger and also sometimes confused state of mind (see table no.2). It can also be attributed to heightened activity of *Rajasika Guna*<sup>13</sup>.

**Table 2** During Pre-Menstrual Phase

Lakshanas	Number of individuals	Percentage
Food cravings	105	50%
Acne/pimples, skin pigmentation	126	60%
Fatigue, muscle cramps, malaise, heaviness and tenderness of breast	112	55%
Anxiety and depression, sleep disturbance, mood swings, difficulty in concentration	126	60%

Levels of discomfort that effect the woman depends upon their psychological and social well-being and the results of the findings can be safely assumed to be due to rigors of modern lifestyle like irregular food habits, consumption of processed foods, peer pressure at both work and home, environmental factors like pollution and lack of bodily rest.

### Menstrual Phase

Individuals reported only physiological rather than psychological changes. Menstruation triggers dual-action, one in the ovaries and the other in the uterus. The level of estrogen and progesterone drops significantly resulting in shedding of the endometrial lining<sup>14</sup> thereby causing low back pain, leg cramps, body pain, abdominal cramps and nausea/vomiting (see table no.3). This may be

due to *Vata Dosha Prakopa Avastha*<sup>15</sup> and imbalance in *Apana Vata*. *Ruksha Guna* of *Vata* also depletes the nourishment of the endometrial tissues leading to the above condition.

**Table 3** During Menstrual Phase

Lakshanas	Number of individuals	Percentage
Body ache, low abdominal pain, low back pain, leg/calf muscles cramps, headache/migraine, nausea/ vomiting	126	60%
Altered stool consistency, appetite disturbance	55	27%
Sleep imbalance and lethargy	122	58%
Hot flushes	73	34%

Apart from the aforementioned reasons there may be a possibility of accentuation of symptoms due to the consumption of *Amla*, *Lavana*, *Katu Rasayukta Ahara* and more physical work during this period. Additionally, inconsistency in stools, substantial decrease in appetite, lethargy and sleep disturbance (see table no.3) is seen due to less coordination between the gut and the brain axis and thereby resulting in imbalance of *Vata Dosha* and *Kapha Dosha*. The level of discomfort experienced during this phase too has commonalities with the earlier mentioned phase also.

### Pre-Ovulation and Ovulation Phase

This is a phase where the women are exuberant, enthusiastic and joyous. Individuals during this phase exhibited enhancement of skin texture/colour and symmetry of facial features which can be attributed to high hormonal activity especially increased level of estrogen<sup>16</sup> (plays an



important role in the nourishment and retaining the moisture of the skin) which helps in formation of collagen thus repairing the damaged skin. During this phase there is predomination of *Kapha Dosha* due to *Kapha Prakopa Avastha* and *Snigdha* and *Kleda Guna* of *Kapha*<sup>17</sup> nourishes nurtures and enhances the texture of the skin.

It is also seen there is significant enlargement of breasts, have an upright posture due to high activity of estrogen and insatiable desire for food ranging from sweet to savory dishes (see table no.4). This may be due to balanced state of *Pachaka Pitta* as well as *Rajasika Gunas*<sup>18</sup> effect on the *Manas* and they seem to prefer *Madhura, Snigdha Yukta Ahara* during this period (*Kapha Prakopa*). It is to be noted that there is invariably viscous watery vaginal discharge during ovulation amongst most of the individuals. This aids in the lubrication of the vaginal walls due to its inherent *Kapha Prakopa Avastha* and may be attributed to *Kleda, Snigdha, Slakshna Gunas*.

Enthusiasm, exuberance and calmness of mind, heightened receptorial tendency to like fragrances and soothing scents are seen (see table no.4).

**Table 4** During Pre-Ovulation and Ovulation Phase (Rutumati Lakshanas)

Lakshanas	Number of individuals	Percentage
Change in skin complexion, symmetry of facial features	126	60%
Enthusiasm, exuberance, calmness of mind, efficiency in day to day work	157	75%
Likening of fragrances and soothing scents	112	55%
Desirous of company of opposite gender	105	50%

Enhanced physical posture	105	50%
Likening for sweet and savory foods	78	37%
Vaginal discharge (not a negative connotation)	208	99%

Sensitivity to olfactory receptors was heightened due to high concentration of estrogens. This can be attributed due to the neurotransmitters in the brain which has an overall positive effect on the mind as a whole. Positivity is known to have been an overarching dominance due to the balance of *Vata Dosha (Prana Vata)* which may enhance the neurological factors in the brain or *Manas*. Action of neurotransmitters makes the women more attractive and receptive. Mood swings are relatively absent during this phase due to the predominance of *Satvika Gunas*<sup>19</sup> which leads to the elevation in psychological well-being of the women. When hormones like estrogen and progesterone are at their peak there seems to be balanced state of *Vyana Vata*, dominance of *Rajasika Guna* elements and *Apathya* quality of *Kapha Dosha*<sup>20</sup> which makes the women to seek company of opposite gender<sup>21</sup> (Observational result in this case is subject to personal bias

## CONCLUSION

In the present study it was largely found that *Doshas* play an important role during each phase of *Rutuchakra* and each *Kala* is determined by combination of one or more *Doshas* varying in the degree of predominance. Further, it was observed that during; *Rajahsrava Kala Vata Dosha* was a **dominant factor** and the imbalance in *Vata Dosha* resulted in the women displaying



symptoms of low back pain, cramps etc., It was also found that there was aggravation of symptoms due to the present life style habits/challenges like food habits, reduced nutrition in the food due to artificial ripening of fruits and vegetables, stress at both work and Family life which have drastically impacted the physiology, fastening the aging process completely and changing the way the women's body functions. During **Rutukala**, it was found that **Kapha Dosha** was **dominant** and due to the predominance of *Sowmya Guna* the individuals displayed enthusiasm, efficiency in work, relative calmness of mind etc., During **Rutuvyateeta Kala**, it was found that **Pitta Dosha** was **dominant** factor and the resulting imbalance in *Doshas*, the individuals displayed anxiety and depression, anger and irritability, skin pigmentation changes, malaise, body ache etc., Only criteria that correlated with the study conducted when compared with modern science was Rutumati Lakshana observed during the Rutukala.



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