

Study of Correlation of Rajastrav (menstrual flow) with Prakriti in Vandhyatwa (Primary Infertility): An Observational Study

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Research Article

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Abstract

Aartav described in Ayurved has great similarity with menstrual flow of woman. The woman health is greatly dependent on normal cyclic menstrual pattern (Rutustrava) which is influenced by many factors like Prakriti, Kaal, etc. The duration of menstrual flow varies from 3 to 7 days according to different Ayurved compendia. The Doshas which have impact on Prakriti, may vary the pattern of Rutustrava. Due to influence of Ritu (seasonal variation), the Doshas attain variations which have impact on Rutustrava. It is known that all the Dosha are important for regulation of menstrual cycle which are acting on its various phases. The predominance of individual's Prakriti may interfere and alter the quantity and duration of flow was the research question. Similarly the vitiation of Doshas causes the abnormal menstrual flow which may result in Vandhyatwa. Thus the present study enlightens the relationship between Prakriti & Rajastrav. Aim & Objective: Study the correlation of Rajastrav (menstrual flow) with Prakriti in Vandhyatwa (primary infertility). To assess the characteristics of Rajapravrutti in different Prakriti in cases of primary infertility. Material & Methods: Observational study, 50 diagnosed cases of primary infertility were included in the study and their observations were recorded in case record form prepared as per criteria mentioned in the methods and results were analyzed by Chi square test. Result- The maximum women with Vataj Prakriti had high grades of menstrual flow is 23 (46%) among them 20 in grade 2. In Pittaj Prakriti out of total 19 (38%) cases 18 had high grade of menstrual flow in grade 3. Whereas in Kaphaj Prakriti 7 out of total 8 (16%) cases shows grade 1 menstrual flow. Statistically significant association was found between Prakriti and menstrual flow. Conclusion- The strong association of Prakriti of women with duration and quantity of menstrual flow is found in this study. The duration of menstrual flow seen vary from 3 to 6 days in this study which is very nearer to the opinions of Ayurved compendia i.e. 3-7 days.

Keywords: Aartav; Infertility; Prakriti; Rajastrav; Vandhyatwa

Introduction

Aartava which is comparable with menstrual flow according to Ayurved is said to be Agneya (hot) in nature and has characteristics of Rakta (blood). It forms Garbha (foetus) when gets combined with Shukra in uterus and is also essential for life [1]. Difference of opinion regarding durations of Rajastrav (menstruation) is seen in Ayurved compendia, according to Vagbhata, Sushruta and Bhavmishra durations of *Rajastrav* is 3 days, as per Charak it is 5 days while Harita and Bhela told 7 days durations of *Rajastrav* [2].

Prakriti is a unique concept of *Ayurveda* pertaining to homogenous combination of *Shukra* and *Shonita* at the time of conception [3]. The difference of opinion regarding duration of *Rajastrav* seen in various compendia may be due to *Prakriti* of female. *Doshas* are absolute factors, for the formation of *Prakriti* whose prominence changes according to age. Present generation females are facing many problems related to their menstruation like painful menstruation, irregular cycles and irregularity in bleeding patterns etc. in their adolescent age without any specific pathology in their reproductive system which causes the chances of *Vandhyatwa*.

Prakriti indicates the predominance of natural *Doshas* which may interfere with the normal body physiology. The nature and pattern of all the physiological and psychological processes are dependent on it. The temperament and prototype of the *Rajastrav* may have some relation with *Prakriti*. *Prakriti* of individual would

Subjective parameters- Assessment of *Rajastrav*

Sr. No.	Pattern of Menstrual flow	Number of sanitary pads /24 Hrs	Total days of Menstrual flow	Type of Soaking of Sanitary Pads	Gradation
1	Spotting	0	0	Not soaked	0
2	Light/ scanty	3	1-2 days	Lightly soaked	1
3	Normal	4-Mar	3-4 days	Moderately soaked	2
4	Heavy	10-May	5-6 days	Heavily soaked	3

Prakriti assessment was done by *Prakriti Vinischaya* based on *Doshas* [4].

Observations & Results

Aartava: *Aartava* is the menstrual flow of blood through vagina in every month. It is slightly black in colour that is brought to the mouth of vagina by *Vayu Mahabhoota* [5]. The normal cycle of menstrual flow starts at the age of twelve years and stops at the age of fifty years in women [6].

be an influencing factor for variation in the characteristics of *Rajapravrutti*. Hence there is need of study in this direction.

Aim & Objective

Study the correlation of *Rajastrav* (menstrual flow) with *Prakriti* in *Vandhyatwa* (primary infertility). To assesses the characteristics of *Rajapravrutti* in different *Prakriti* in cases of primary infertility.

Material & Methods

Observational study

Conceptual Study

Bhrihat-trayee, Laghu-trayee with their commentaries, other text books related to topic, modern text books of eugenics and journals were extensively referred.

Clinical Study

50 diagnosed cases of primary infertility were included in the study and their observations were recorded in case record form prepared as per criteria mentioned below.

Sanitary Pads

For measuring the amount of menstrual blood within 24 hours same size sanitary pads (Stayfree secure extra-large) were used.

Arundatta commented the word *Aartava* only for menstrual blood while Vagbhata and others refer *Aartava* with ovum. *Rasaj, Raja, Parvati Raja, Shonita* and *Asruka* are few synonyms of *Aartava* [7]. There appears some difference of opinion regarding formation of *Raja* (menstrual blood). Acharya Charak, Sushruta, Vagbhata, Dalhan and Chakrapani opined that it is formed from

Rasa, Arundatta opines that this *Raja* is formed from *Ahar-rasa* and not from *Rasadhatu*. Sharangdhar and Bhavmishra mention *Raja* as by-product (*Upadhatu*) of *Rakta* [8].

Appearance of Shuddha Aartava

The menstrual blood which is either like rabbit's blood or like liquid shellac and which blood colour does not stain on the clothes, having no bad smell, such a menstrual blood is known as *Shuddha Aartava* [9].

Properties & Amount of Aartava

Aartava is *Agneya*, has characteristics of *Rakta* (blood), forms *Garbha* (foetus) and is also essential for life [10]. The estimated quantity of *Aartava* in female body is four *Anjali* (approximately four ounces) [11]. The *Aartava* excreted in more or fewer amounts are not *Shuddha* [12].

Aartava or Raja as Hormones

The estrogen and progesterone are responsible for female characters and development of reproductive organs. Appearance of hair in the body (*Romaraji*) and development of breast, uterus and vagina etc. occur due to accumulation of *Aartava* in the body during puberty. Sushruta told *Apara* (placenta) is formed from *Aartava*.

The development of breast and preparation of breast for the secretion of milk are controlled by both estrogen and progesterone. According to Vagbhat, blackening of areola of nipple and lips occurs due to *Aartava*. The hyper pigmentation of areola, nipple and face is the function of estrogen [13]. Irregular and scanty menstruations are the clinical features of both *Aartava Kshaya* and estrogen deficiency [14].

Factors influencing the menstrual cycle

- **Rasa:** *Raja* is said to be an *Upadhatu* of *Rasa*.
- **Rakta:** The blood discharged by woman during her menses is the same which circulates through the body.
- **Dhamani:** *Vata* acts through *Dhamani* for the discharge of menstrual fluid. Especially *Apan* is said to be responsible for this action. Influence of *Apan* through *Dhamani* is that of nervous system acting on the uterine vessels.
- **Dosha:** All the physiological process of menstruation is governed by three *Doshas*, viz. *Vata*, *Pitta* and *Kapha* [15].
- **Rutuchakra:** Menstrual cycle occurring in females has been termed in Ayurved as *Rutuchakra*. A single *Rutuchakra* covers a period of one *Chandramasa* (28 days) which is divided into three parts.

SN	Specific stage	Duration	Condition of Reproductive system	Dominant Dosha
1	<i>Rajakaal</i> (Menstrual Phase)	3-5 or 7 days	Menstrual blood loss	<i>Vata</i> , excretion is function of <i>Apan Vayu</i>
2	<i>Rutukaal</i> (Proliferative Phase including ovulation)	12 or 16 days Or whole month, Even without menstruation	Establishment of new <i>Raja</i> (new cycles), optimum chances of fertilization, increased sexual desire etc.	<i>Kapha</i> , Reconstruction of tissues is done by <i>Prithvi</i> and <i>Jala</i> which are components of <i>Kapha</i> .
3	<i>Rutuvyatita- Kaal</i> (Secretary Phase)	9-13 days	Fibrinolysis - a fibrin clot, the product of coagulation, is break down. Its main enzyme plasmin cuts the fibrin mesh at various places, leading to the production of circulating fragments.	<i>Pitta</i> Presence of Purana <i>Raja</i> and constriction of <i>Yoni</i> , less chances of conception, raised body temperature.

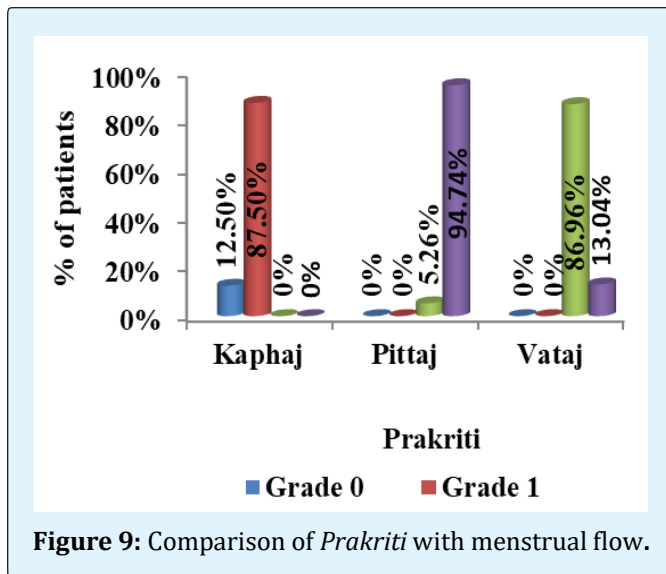
Table No 1: Dominant *Doshas* in specific stages of *Rutuchakra* [16].

Clinical Study: Correlation of Prakriti.

Prakriti	Menstrual Flow				Total
	Grade 0	Grade 1	Grade 2	Grade 3	
Kaphaj	1(12.50%)	7(87.50%)	0(0%)	0(0%)	8 (16%)
Pittaj	0(0%)	0(0%)	1(5.26%)	18(94.74%)	19(38%)
Vataj	0(0%)	0(0%)	20(86.96%)	3(13.04%)	23(46%)
Total	1(2%)	7(14%)	21(42%)	21(42%)	50(100%)
χ^2 -value	83.06, p-value=0.0001, Significant				

Table 1: Comparison of Prakriti with menstrual flow.

The maximum women with *Vataj Prakriti* had high grades of menstrual flow is 23 (46%) among them 20 in grade 2. In *Pittaj Prakriti* out of total 19 (38%) cases 18 had high grade of menstrual flow in grade 3. Whereas in *Kaphaj Prakriti* 7 out of total 8 (16%) cases shows grade 1 menstrual flow. Statistically **significant association** was found between *Prakriti* and menstrual flow of the patients by using chi-square test (χ^2 -value=83.06, p-value=0.0001, significant).



Discussion

Aartava is the menstrual flow of blood within a few hours of the necrosis caused by constriction of terminal arteries of uterus followed by their dilatation in every month which is slightly black in colour that is brought by *Vayu Mahabhoota*. *Aartava* refers to ovum by some Acharya while Arundatta assumed it as only menstrual flow. Vatsayana clearly mentioned concept of *Bahirpushpa* and *Antahpushpa* which means menstrual flow and ovum respectively. In general *Aartav* is meant for menstrual flow because the appearance of *Shuddha* and *Dushta Aartav* described by many compendia reveals its resemblance with it. Though ancient Ayurved compendia described *Aartav* mostly in terms of menstrual flow, they were known about the association of this menstrual flow with normal and abnormal functioning of ovary or reproductive health of a woman [17].

Biological variability is the greatest variability found in universe. The duration of menstrual flow ranges

between 3 to 7 days according to different Acharyas. Many physiological parameters have influence of *Desha*, *Kaal* and environment. Whatever the variations observed in duration of menstrual flow may be because of various geographic and other variations like *Kaal*. The individuals *Prakriti* has major role in many physiological variations among the subjects. *Aartava* or menstrual flow is such an entity which may have association with *Prakriti* for its duration of flow. In this perspective the clinical study was performed to assess the role of *Prakriti* in menstrual flow as per the methodology specified in materials and methods. The observations obtained are summarized as above in the respective column.

Statistically significant association was found between *Prakriti* and menstrual flow of the patients by using chi-square test (χ^2 -value=83.06, p-value=0.0001, significant). As mentioned in above observation table the Grade-3 menstrual flow is observed in 21 (42%) cases in which 18 are from *Pitta Prakriti* and 3 from *Vata Prakriti* women. It means that Grade-3 flow is prominent in *Pitta Prakriti* individuals. According to Assessment criteria for Grade-3 menstrual flow stated in methodology the duration of menstrual flow is 5-6 days which suggest duration of flow more compared to the normal values. In *Vata* predominant individuals 20 (40%) cases had shown Grade-2 menstrual flow out of total 21. Here the duration of flow is 3-4 days and considered as normal flow. *Aartav-pravrutti* (excretion of *Aartav*) is primarily a function of *Apan Vayu* which comes under the influence of *Vata*. In *Vata Prakriti* women normal menstrual flow is observed which signifies the normal function of *Vata* in these cases. Whereas out of total 8 cases of *Kapha Prakriti* women; 7 had shown Grade-1 and 1 case had shown Grade-0 menstrual flow. *Kapha* promotes the integrity and buildup of body tissues and not helps for lysis action like *Pitta* which is needed in menstrual flow. So in *Kapha* predominant individuals the less quantity of menstrual flow is observed with minimal duration of 1-2 days. All the findings observed in this study are significant as per the test specified above. It means that there is definitely the role of *Prakriti* of individuals in body physiology which is seen in terms of menstrual flow in this study. The variations in duration of menstrual flow mentioned in Ayurved compendia by different Acharya mostly may be because of *Prakriti* of individuals and it is observed in this study. It can be said that the normal duration of menstrual flow may vary from 3 to 6 days which is very nearer to the opinions of Ayurved compendia i.e. 3-7 days.

Vataj flow	Pittaj flow	Kaphaj flow
As the <i>Vata Dosha</i> dominates the uterus, its <i>Sheeta</i> and <i>Khara</i> qualities causes the blood vessels to constrict. <i>Ruksha Guna</i> depletes the bodily tissues and finally causes early cessation of menstrual flow. Due to decrease in plasma and blood tissues, decreased nourishment to the endometrial lining of uterus the overall flow and menstrual discharge will be less, Where ever there is a blockage for the free flow of <i>Vata</i> , there will be pain. So most of the <i>Vata dosha</i> dominating cycles will be painful.	<i>Pitta</i> is hot and sharp. So it brings more fluidity to the blood so that it flows easily. <i>Pitta</i> resides in blood and in excess it may cause heavy bleeding. As it causes tendency for swelling, it leads to tender, swollen breasts, acne etc that Women experience during their premenstrual period.	<i>Kapha</i> is dull, heavy and sticky. Stronger the influence of <i>Kapha Dosha</i> , the more likely to get a prominent growth of the endometrial tissue. As more blood vessels grow to supply this growth, the <i>Kapha</i> cycle is more likely to experience a heavier but short duration.

Table 2: Qualitative Difference in Menstrual Flow on Predominance of *Tridosha* [18].

Conclusion

Study indicates *Aartava* can be considered as both menstrual flow and ovum. The terms *Bahirpushpa* and *Antahpushpa* are comparable with menstrual flow and ovum respectively. *Rutuchakra* mentioned in Ayurved can be understood as menstrual cycle in which the menstrual phase is dominated by *Pitta Dosha*, later due to increased *Kapha Dosha* it persists a few days and *Vata Dosha* helps to propel the ovum from the follicle at the time of ovulation. The strong association of *Prakriti* of women with duration and quantity of menstrual flow is found in this study. The duration of menstrual flow seen vary from 3 to 6 days in this study which is very nearer to the opinions of Ayurved compendia i.e. 3-7 days. The study shows stronger relationship and one of the main causes of primary infertility. By evaluating prakriti one should approach infertility.

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