

AN OBSERVATIONAL STUDY OF SHUDDHA AARTAVA LAKSHANA

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ABSTRACT

Ancient authorities dealt with female physiology but their approach was different. As title of this research project indicates, it is an observational study for revalidation of *shuddha aartava* characteristics. It is a survey which has descriptive type of observational study design. Here, *aartava*¹ is considered as menstrual discharge. How to understand that menstrual discharge is non vitiated by *doshas*/it is pure / normal? Answer is given by *aacharyas* as *shuddha aartava* characteristics. They told it, when one has to differentiate between abnormal and normal menstrual discharge. Aim is to study *shuddha aartava* characteristics. Study design includes Literature study and Observational study. Study was done for *shuddha aartava* characteristics from available *ayurvedic* literature and modern science, if any. Data was collected with the help of questionnaire from 96 apparently healthy females of age group 18-35 years. *Shuddhata* is assessed by assessment criteria qualitatively. Physiological parameter for *shuddha aartava* quantity in total number of sanitary pads used in a menstrual cycle was evaluated by range and confidence interval is evaluated.

Keywords: *shuddha*, *aartava*, menstruation

INTRODUCTION

Type of research-

It is a survey which has descriptive type of observational study design.

Need and purpose of study-

1. Its objective is to evaluate the quantity of *shuddha aartava* in total number of sanitary pads used in a menstrual cycle, after assessment of *shuddha aartava* by assessment criteria.
2. Quantity of *aartava* is as important as interval between two menses, days of bleeding and other characteristics of *shuddha aartava*. Quantity of *aartava* mentioned by *aacharyas* is in *anjali pramaan* or mentioned as 'neither in excess nor scanty'. To make it more convenient it can be counted in 'total number of sanitary pads' used

in a menstrual cycle. This study is within the limits of physiology, to understand 'what is normal'. It is easy to understand abnormality if one knows the normal. Qualities of *shuddha aartav* were studied as per *ayurvedic* parameter and quantity was not studied as per *ayurvedic* parameter.

3. Female is a root for the fetus⁴. A healthy mother is a source for healthy progeny and thus healthy generation. Healthy body is a boon for day to day activities and not just for the purpose of reproduction. Monthly menstruation is like detoxification process for the body. *Shuddha aartava* is an indicator of good health of female body.

4. It had revalidated all possible characteristics of *shuddha aartava*, with the help of questionnaire, as it is a type of examination called as 'Prashna Pariksha'. *Shuddha aartava* characteristics can be applicable and cost effective in comparison with costly investigations.

Shuddha aartava characteristics are-

Which discharges monthly, without sliminess, without burning sensation, without pain, discharges up to five nights, neither in excess nor scanty, whose color is like *gunjaphala*, red lotus, *aalakta*, *indragopa*⁴, rabbit's blood, liquid *lakh*, which does not stain cloth after washing with water³.

Underlined words indicate quantity of *aartava*, which is neither in excess nor scanty. Except this quantity, remaining characteristics are considered as an assessment criteria for *shuddha aartava* qualitatively.

Answers of questions were collected, to evaluate the range and confidence interval for total number of sanitary pads used in a menstrual cycle.

AIM-

To study *shuddha aartava lakshana*.

OBJECTIVES -

1. To study *shuddha aartava* characteristics from available *ayurvedic* literature.
2. To study opinion of modern science related to menstrual cycle and characteristics of normal menstruation.
3. To collect data with the help of Questionnaire.
4. To decide *aartava* as *shuddha aartava* with assessment criteria.
5. To evaluate quantity of *shuddha aartava* in total number of sanitary pads used in a cycle.

As per study design literature study was done and data was collected under following main headings-

Literature study-

1. Previous work done²¹ - important findings in previous work done are discussed in discussion later on.

2. *Aayurvedic* literature review

3. Modern literature review

Aayurvedic literature review^{1,7} -

Then, what is *Shuddha aartava*?

It includes two words 1. *Shuddha* 2. *Aartava*

Shuddha means-1. Pure 2. Non vitiated by *vaatadi doshas* and in its natural place.²

'Vitiating and nonvitiating by *vaataadi doshas*', is very important and broad concept of *aayurveda*, on which physiology and pathology of *aayurveda* is based.⁸ Vitiating means makes less good or less effective. Natural or normal homeostatic state is disturbed in process of vitiating. General view for vitiating and nonvitiating is explained below¹⁴:

When *dhaatavah* are not in physiological condition, they are not in balanced state with each other and such condition gives rise to diseases. When they are in perfect balance with each other, it is health. When one feels comfortable, it is health. Any feeling of unwell being leads to diseases²⁶. *Doshaah* remain in two conditions in body- physiological and pathological.¹⁴

Vitiating *doshaah* when circulate in whole body, unite with deficient entities of body and produce disease.²⁷ All body entities necessarily are liable to originate only in *strotas* and become deficient in *strotas*. Diseases are principally due to vitiating *doshaah*. *Doshaah* in homeostatic condition keep an individual healthy.

Doshaah amongst all body constituents have the quality of vitiating each other as well as other body constituents. When *aartava* gets vitiating by *doshaah*, it will be unhealthy condition or pathology, called as *aartava dushti*. When *aartava* is non vitiating by *doshaah*, it is pure

and physiological condition where *doshaah* are in their homeostatic state i.e. *shuddha*.

Phases of menstruation & influence of doshas-

Menstruation is a cyclical process spread over a period of month. The period can be divided into 3 phases according to physiological changes taking place in the body¹⁶.

The phases can be-

1. *Ritukaala*
2. *Rutaavateet kaala*
3. *Rajahkaala*

Focusing on third phase:

3. *Rajahkaala*¹⁶:

Duration of phase:

This phase is present for 3 or 5 or 7 days according to *Vagbhat*⁸, *Charak*⁴ and *Haarit*⁷ respectively.

Menstrual Discharge:

The discharge is similar to colour of *gunjaphala*, *padma*, *aalakta*, *indragopa*, *liquid lakh*, rabbit's blood. Or slightly blackish red. It has typical odour and it does not stain the cloth after washing with water.

Amount of menstrual fluid:

Amount of *aartava* is 4 *anjali* or the amount is neither in excess nor scanty⁴.

Main doshas working in this phase-

This phase is mainly influenced by physiological/ non vitiated *vaata*, named *apaana*.²⁸ Menstrual cycle is governed by 3 *doshas*, *kapha*, *pitta* and *vaata*. *Rasa*, *rakta* and *dhamani* plays the role of medium respectively. Normal condition of these entities causes normal menstrual cycle.

What characteristics the *shuddha aartava* has:

Aartava –

- Which discharges monthly
- Which is without sliminess
- Without burning sensation
- Without pain
- Discharges upto five nights

Neither in excess nor scanty

Whose color is like *gunjaphala*, red lotus, *aalakta*, *indragopa*.

These are the main characteristics described under the heading of *Shuddha Aartava*, in *Charaka Samhita*. It is the work of Redactor *Aacharya Drudhabala*. As *Charak Chikitsa sthan 30* is *sampurita* by *Drudhabala*. Related to these characteristics, opinion of other *aacharyas* is taken into consideration. These are: The *aartava* which is like rabbit's blood or like liquid *lakh*, which does not stain cloth after washing with water or it leaves redness (*lauhityam*) when it's stain on cloth is washed with water. Again, the colour of normal *aartava* should be *ishat krushna lohit* or *ishat krushna rakta* i.e. slightly blackish red. Smell of normal *aartava* should be *vigandha* i.e. *vishishta gandha*⁸.

Terminology –

1) What is *maasa*?¹⁶

Maasa means *chandra*/moon. *Maasa* is lunar month or *chandramaasa*. It can be of 28-30 days.

2) What is mean by *Nishpiccha* ?

1. Slimy /
2. Viscid/
3. Adhesive.

Paichhilya means sliminess, in this context. It is included in *aatmarupa* of *kaphadosha*.³¹ This is used for secretion of a creature Snail or for describing plant's gum, like *shalmali*-silk cotton tree gum. *Nishpiccha* lacks sliminess.

3) What is *daaha* ?

It can have following meanings-

1. Burning conflagration
2. Glowing redness
3. Sensation of burning / internal heat
4. Feverish/morbid heat

....Sanskrit-English Dictionary

According to *Chakrapani*, Daaha means burning sensation in the whole body. It is an indication of *pittvikaar*³¹. It is included in forty *naanaatmaj pittavikaaras*. Vitiated *pitta* only can cause *daaha*. *Shudhha aartava* discharge lacks *daaha*.

4) What is *aarti*?

It can have following meanings-

1. Pain
 2. Sorrow ...sanskrit-english dictionary
- Shool* is included in *aatmarup* of *vaatadosha*³¹.
Shudhha aartava discharge lacks pain.

5) What is mean by *panchraatraanubandhi* ?

Pancha means Five. *Raatra* means night and day. As in *lunaar* counting, night comes first. *Anubandhi* means related to / connected with. So, *panchraatraanubandhi* means connected with five days.

6) What is mean by *gunjaphala* ?

It is a seed of *Abrus precatorius*. Out of its types blakish red *gunjaa* is considered here.

7) What is mean by *padm*?

Padma means red lotus flower. (See picture a and b)

Picture **a** is collected from: flora of kolharur district.

Picture b is collected from: internet as 'red lotus'



Gunjaphal



Picture: a padm



Picture: b padm

8) What is mean by *aalakta* and *lakshaarasa*?

Aalakta is *lakshaa* or shellac, which is derived from an insect named *Laccifera lacca*. Colour derived from shellac is called *aalakta* or *mahavar*. *Lakshaarasa* is a solution/juice of shellac.

9) What is mean by *Indragopa*? (See picture a and b)

It is name of an insect called Cochineal. Its latin name is *dactylopius coccus*. Carmin dye is prepared from this insect. Female cochineal changes her color continuously after fertilization. Two pictures are collected as **a** and **b**. shades of red are related with female insect.



Picture: a: stage in life of female insect



Picture: b: many insects

10) What is mean by *Shashasruka*³?

It means rabbit's blood.

Details of *Shuddha Aartava* Characteristics-

It can be studied under following heads-

A. Time duration-

1. Interval between two menses
2. Days of bleeding

B. Symptoms-

1. Pain
2. Burning sensation
3. Sliminess

C. Colour of *aartava*

D. Unstaining property of *aartava*

E. *Gandha* /Smell of *aartava*

F. Quantity of *aartava*.

A. Time duration-

1. Interval between two menses
2. Days of menstrual flow

1. Interval between two menses-

Ancient *aacharyas* have no debate on normal interval between two menses. It is considered of one lunar month i.e. of 28-30 days.

1. Days of menstrual flow-

Aacharyas have different opinions on duration of menstrual flow. If opinion of these *aacharyas* considered together, it can be 3 Or 5 or can be of 7 days. Maximum *aacharyas* considered it of 3days^{16,30}.

B. Symptoms⁴-

1. Pain
2. Burning sensation
3. Sliminess

Menstruation is a normal physiological condition in females, like micturation and defecation. *Shuddha aartava* lacks pain, burning

sensation in whole body while expulsion and sliminess. These Symptoms are considered abnormal, if associated with menstrual flow. These symptoms indicate vitiated condition of *doshas*.

C. Colour of *aartava*⁸-

Gunjaphala, padma, aalakta, indragopa, shasaasruk, are *drushtantas* or examples to understand the color of *aartava*. But exact colour and reasoning behind it, is told is *ishat krushna*⁸ i.e. slightly blackish colour of *aartava* is due to its contact with *prakrutistha preraka pavana* i.e. normal *vaata dosha* working at site of *garbhashaya*.

According to site of *vaata*, type of *vaata* working at *garbhakoshtha* is named *apaan vaata*. This *aartava* is not in a motion like blood; it accumulates in *garbhakoshtha* and then flows out, so it comes in contact with unvitiated *vaata*, so it gets a blackish shed. It is a slight shed and not completely dark, as due to vitiated *vaata*.

D. Unstaining property of *aartava*³

The normal healthy *aartava* has a property that, when its stain, is washed with water, does not leaves redness or it removes with water. It means *aartava* gets dissolved in water.

E. *Gandha* /Smell of *aartava*⁸

Gandha /Smell of *aartava* is an unusual, typical smell which is due to normal *pittadosha* and not due to vitiated *pittadosha*. Its characteristic smell and colour indicates domination of *teja* as well as *prithvi mahabhutas*, among the five *mahabhutas*.

F. Quantity of *aartava*

Quantity of menstrual fluid should not be in excess or scanty⁴, as per individual female is considered. Another opinion is, *aartava* has four *anjali pramana*²⁹.

What is mean by *anjali pramana*?

It is a parameter for measurement of liquid or fluid. *Anjali* is the quantity of liquid hold in the hollow when both palms are hold together. It is indicative of slight variation in quantity of the fluid from one person to another. So these quantities are not very accurate.

METHODOLOGY

Plan of work- Volunteers- 96 sample size.

Exclusion criteria:

- *Anartavata*
- Under any type of medications e.g. contraceptive pills

- With known H/O any major illness related to *aartav vaha strotas*
- H /O operative procedure related to *aartav vaha strotas*.
- Non co-operative females

Inclusion criteria: Females of age group 18-35 years

Assessment criteria:

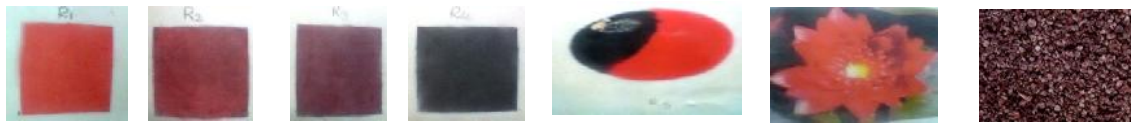
A) Time duration-

- 1) Interval between two menses- 28+2days
- 2) Days of bleeding- 3 to 7days

B) Symptoms-

- 1) Pain- no
- 2) Burning sensation-no,
- 3) Sliminess-no

C) Colour of *aartava*-R2/R5/R6/R7



R₁

R₂

R₃

R₄

R₅

R₆

R₇

Note:

R₁- red, R₂.slightly blakish red, R₃- blackish red, R₄.black, R₅.*gunjaphala*, R₆.*padm*, R₇.*indragops*

D) Unstaining property of *aartava*- present
Shuddha aartava- present / absent

E) Total number of sanitary pads-....
+spotting

Flow chart-

Literature study was done



Volunteers were screened as per inclusion and exclusion criteria



Two menstrual cycles were observed and answers were recorded in third cycle



Assessment of *shuddha aartava* was done by assessment criteria



Collected data was analyzed statistically



Quantity of *shuddha aartava* was measured in number of sanitary pads used in a menstrual cycle



Conclusion was drawn.

Statistical analysis-

1. It has been done by calculating range for quantity of *shuddha aartava* in number of sanitary pads used in a menstrual cycle
2. It has been done by calculating confidence interval.
 - For days of bleeding
 - For total number of sanitary pads used in a cycle

Observations:

Table1: Frequency distribution of volunteers according to Interval between two menses-

Interval	Frequency	Percent
28	02	2.1
29	79	82.3
30	15	15.6
Total	96	100

Table2: Frequency distribution of volunteers according to days of bleeding:

Days	Frequency	Percent
3	35	36.5
4	28	29.2
5	33	34.4
Total	96	100

Table3: Frequency distribution of volunteers according to colour of shuddha aartava -

Colour	Frequency	Percent
R2	96	100

Table4: Cross tabulation of volunteers according to Days & Number of pads

Days	Number of Pads			Total
	3 Pads	4 Pads	5 Pads	
3 Days	2	30	3	35
4 Days	0	25	3	28
5 Days	0	13	20	33
Total	2	68	26	96

Interpretation: Total 35 females used 3 to 5pads in 3 days, with max 4 pads. Total 28 females used 4 to 5pads in 4 days, with max 4 pads;

Total 33 females used 4 to 5 pads with max 5 pads. No female used 3pads in 4 and 5 days.

Table 5: Frequency distribution of volunteers according to presence of shuddha aartava –

Shuddha Aartava	Frequency	Percent
Present	96	100

DISCUSSION

- On previous work done
- On *ayurvedic* literature study
- On modern literature study
- On statistical analysis and results
- On problems while conducting survey

On previous work done - A study of *aartava pravritti* in post tubectomy women 2013-2014, from Tilak Ayurved College, Pune, Maharashtra, concludes-There is relation between ovum and menstrual flow, as if there is cessation of ovum, the menstruation is also affected.

On *ayurvedic* literature study-

According to *kashyapa*²⁰ female *shonita* and male *shukra* get complete maturity (*purnata*) for their functions, up to 16 yrs. But due to different food habits (*aahaarvisheshata*) and healthy conditions (*aarogyaat*), this maturation can occur earlier. It means that, slight variations in menarche age can occur due to different food habits²⁰.

1. *Aartava* is an *updhaatu* particularly expressed in female body.^{8,9,2}

2. It is formed as *updhaatu* when *rasadhaatu* is formed.

3. It has its own *strotas* and *agni* should be considered there as *aartava updhatwagni*.¹⁷

4. The term *Aartava* is coming from the word *Ritu*, which indicates its connection with time period and cyclical nature. As in nature, seasons get repeated after particular time period and in cyclical manner. In the same way, particular physiology repeats in female's body^{18,23}

5. The word '*Aartava*' can be used for a Flower, which arises in its natural season and can give birth to Fruit, decided naturally. In its own season, it is full of its all properties like color,

smell¹⁸.....so, word '*aartava*', can be used for menstrual fluid & *streebeeja*. Wherever word *aartava* is used to describe menstrual flow, it should be understand that menstrual flow is an indicator of ovum. It means it is outward expression of ovum, which is not to be seen with naked eyes.

6. Problems related to female's health are observed to be present from ancient times so treatments are observed in *aayurved* literature³. Reference of *shuddha aartava lakshana* found here³.

7. The *sharirbhava* produced in body vary person to person, their variation should be within physiological limits.

e.g. *mootra* produced in body varies person to person in its quantity, but logically answered quantity is 4 *anjali*. *shuddha aartava* should have a convenient parameter for its quantity.

Characteristics of *shuddha aartava* are one of the basic concepts of *aayurveda* but in modern literature normal menstruation is mentioned with slight variations by different authors.

Some of them are as follows^{13,22}-

- Dictionary meaning of word 'menstrual' is 'monthly'²².
- 'Menstruation' means 'menstrual fluid or discharge'²².
- Reproductive years of adult female accepted are- 13 to 46 yrs⁶
- First menstruation is termed as 'menarche'.^{5,6}
- Menarche age ranges from 11 to 15 yrs, with an average of 13yrs.⁵

- Cycle of 20,21,40,45 days is considered normal.^{5, 6} (Aayurved says of 28-30 days i.e. a *chandramas*.)¹⁶
- Per cycle duration of menstruation is of 4-5 days.^{5,6,10}
- Estimated amount of blood loss is 40ml + serous fluid 35ml= total 75 ml Menstrual fluid.⁶
- Color of menstrual fluid is like 'dark-altered-blood', which is not like normal blood flowing through arteries.⁵

Discussion about assessment criteria-

While assessment of *shuddha aartava*,

A1. Interval between two menses observed is of 28-30 days i.e. a *maasa* or a lunar month. 2% females were with 28 days interval between two menses, 82% were with 29 days cycle, 16% were with 30 days of cycle. With other *shuddha aartava* characteristics in assessment criteria.

A2. Days of bleeding observed were 3 to 5 days, with other *shuddha aartava* characteristics in assessment criteria. Menstruation upto 7 days had not observed.

B1. Any Pain, only during menstruation had not observed. Other *shuddha aartava* characteristics in assessment criteria were present.

B2. Burning sensation in body, only during menstruation had not observed. Other *shuddha aartava* characteristics in assessment criteria were present.

B3. Sliminess to flow of menstruation had not observed. Other *shuddha aartava* characteristics in assessment criteria were present.

C. A stage of female *indragopa* is matching with *ishat krushna* color.. It is noted here as a *vaidya samvedya lakshana*’,.



D. Unstaining property of *shuddha aartava*- On the basis of experience in third month of observation,

unstaining of *aartava* after washing with water when it stained on cloth has been observed. Cloth was immediately washed by females after staining. Other *shuddha aartava* characteristics in assessment criteria were observed to be present in them. Unstaining indicates nonvitiation of *aartava* by *dosha*.

On observation, statistical analysis and results-

This part of discussion is based on-

- a. Collected data, Demographic data-
 1. Age
 2. Marital status
 3. occupation
 - b. Assessment criteria
 - c. Observed data
3. On the basis of statistical analysis-
 - a) Range of sanitary pads used in a menstrual cycle
 - b) Confidence interval(CI) for days of bleeding
 - c) CI for total no. of sanitary pads used in a cycle.

3. On the basis of results -

Discussion on observation and results in 96 females-

As per cross tabulation graph in statistical analysis-

- Observations show that, as days of bleeding are important, quantity is also important.
- 3 Days of bleeding does not mean that quantity of *aartava* is less or 5 days of bleeding does not mean that quantity is more.
- 3 Days of bleeding can require 4 pads, 4 days of bleeding can require 4 pads, and 5 days of bleeding can require 4 pads.
- A/c to *aayurveda aartavpravritti* is as normal as micturation and defecation but it is not included in '*vega*'. *Aartava* cannot be hold as *vega*.
- In these 3 processes *apan vat* is in function.

- Speed of normal *apan vat* is responsible for expulsion of endometrial lining.
- It can have slight variation from female to female. This slight variation can be calculated by confidence interval and it will also give population mean.
- So, for 95% confidence interval, days of bleeding are of 4 days and total number of sanitary pads used in a menstrual cycle of *shuddha aartava* is 4pads.
- Range for sanitary pads used in a menstrual cycle when *aartava* is *shuddha* is 3pads to 5pads.

CONCLUSION

- Range for sanitary pads used in a menstrual cycle when *aartava* is *shuddha* is 3pads to 5pads.
- Females will need to use 4 Pads, when *shuddha aartava* was observed to be present in them, in a menstrual cycle. So, quantity of *shuddha aartava* in total number of sanitary pads used in a cycle is 4 Pads. It is by confidence interval.

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