



A METHODOLOGICAL STUDY OF TAIL BINDU MUTRA PARIKSHA

A REVIEW ARTICLE

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INTRODUCTION

Ayurveda is a science that focuses on the physiological and pathological conditions of humans. According to *Ayurveda*, the fundamentals of life are *Dosha*, *Dhatu* and *Mala*ⁱ. *Purisha*, *Mutra* and *Sweda* are the three types of *Mala*. *Purisha* and *Mutra* are the two *Annamala*ⁱⁱ. These *Mala* not only execute their assigned roles, such as *Avalambana* and *Kledavahanam* but also marker of general state of healthⁱⁱⁱ. That's why, they are included in *Ashtavidha Rogi Pariksha* as described by *Acharya Yogaratnakara*^{iv}. Apart from *Annamala* i.e., *Mutra* and *Purisha*, other components of this 8-fold examination include *Nadi* (pulse), *Jihwa* (tongue), *Shabda* (speech), *Sparsha* (touch), *Drik* (eye sight) and *Akriti* (body built)^v.

According to *Acharya Yogaratnakara*, a physician who is unaware of the characteristics of pulse, urine, and tongue among other things, kills the creatures (patients) in no time and as a result he loses his glory as a physician^{vi}. As per *Acharya Yogaratnakara*, color and characteristics of urine change in different diseases. Urine becomes palish in *Vatika Vikara*; frothy in *Kaphaj Vikara*; crimson in *Pittaj Vikara* and black in *Sanipataja Vikara*^{vii}.

NEED OF THE STUDY

In *Prakriti* description, specific characteristics of *Mutra* are not mentioned in classics but there should be some correlation between characteristics of *Mutra Pariksha* and *Prakriti*. Hence to find out any relation between characteristics of *Mutra Pariksha* and *Prakriti*, this study has been planned.

MATERIALS & METHODS

MATERIAL AND METHODS

INTRODUCTION- The methodology is a broad research approach that describes how a research project will be carried out and, among other things, the methodologies that will be used. These methodologies define the means or modes of data gathering, or, in some cases, how a specific outcome is to be calculated. This is an analytical study which attempts to find whether any relation exists between *Mutra Pariksha* and *Prakriti*.

STUDY SETTINGS

Part I- Study of *Taila Bindu Pariksha*

In texts no direct relative reference “*Taila Bindu Pariksha*” but in *Sharangdhar Samita* it is mentioned that if variety of Tail is not indicated then Krishna Tila should be taken for use.

In standardization of the procedure, *Taila Bindu Pariksha* from various aspects was done. Following criteria were identified and standardized.

- Shape & size of *Patra* (containers)
- *Mutra Pramana*
- Size of *Tail Bindu*
- *Tail Bindu*'s Height from the surface of urine
- Time duration between collection and performance of test
- Type of *Tila Taila*
- Picture of the procedure

The above components were Protocol on seemingly healthy volunteers who followed the same food pattern, and the entire method was recorded to give evidence.

Part II-To test the rationality of *Taila Bindu Pariksha*

Before proceeding for standardization part, it was planned to check rationality of *Taila Bindu Pariksha*. The following hypothesis was taken into consideration to check the rationality of *Taila Bindu Pariksha*.

The result of *Taila Bindu Pariksha* of apparently healthy person should be same if it is done for consecutive days under normal physiological and psychological condition.

1. Apparently healthy volunteers having same diet pattern.
2. Each time separate fresh *trina* (grass plant leaves) was used for dropping the oil over urine surface.
3. Petri dish of fixed diameters as testing container was used.
4. Oil was dropped from various heights above the urine surface.
5. Test was done at fixed times after collection of urine.

SHAPE & SIZE OF PATRA (CONTAINERS)

Almost all *Ayurvedic* books recommend using glass *Patra* for *Taila Bindu Pariksha*, with the exception of *Vangasena*, who says either glass or bronze can be used. Glass was chosen as the standard for our work because it is easier to clean and more readily available than bronze, and it is also less expensive.

SHAPE OF PATRA

Test was performed in round shaped vessels of proper dimensions and observations were noted down.

SIZE OF DROP

Trina was used for dropping the oil over the urine surface based on *Ayurvedic* literature. *Ayurvedic* scriptures do not specify the nature of *trina* (i.e., whether it should be fresh or dried). Fresh *trina* has a waxy covering on the leaf section, which allows oil drops to readily slide down.

MUTRA PRAMANA

The test was carried out with 50 mL entire voided sample that covered at least 3/4th of the testing container.

SIZE OF TESTING CONTAINER

Keeping other parameters constant, *Taila Bindu Pariksha* was done 4inch sizes of testing container.

TAIL BINDU'S HEIGHT FROM THE SURFACE OF URINE

The next part of work was Protocol of height of the oil drop from the surface of urine at the time of dropping of oil. Heights tried from the surface of urine were About 1 cm as follows.

TIME DURATION BETWEEN COLLECTION AND PERFORMANCE OF TEST

The second area of study was the time factor (the period between collecting a urine sample and performing the test). The observations of a urine sample were recorded for this purpose. After a two-hour break from the time of collecting.

WASHING OF TESTING CONTAINER

Following each *Taila Bindu Pariksha* operation, the containers were washed in chromic acid for 24 hours before being cleaned in water and then rinsed with distilled water. The container was utilized for another test after drying in the oven. Chromic acid was prepared in Dett. by dissolving 200gm of potassium dichromate in 1 liter of water with constant stirring. It was kept overnight and next day commercial H_2SO_4 (1.25 L) was added drop wise with regular stirring until and unless it completely dissolves. This prepared solution was used for cleaning purpose.

Magnetic Compass – For this study used a magnetic compass.

Place -All of the recordings were made in the Hematology & Urology lab, Deptt. of Kriya Sharir, which had plenty of natural light. Special precautions were taken to ensure that the spread was not hampered by wind, dust, or other disruptive factors.

PART III - Study of *Taila Bindu Pariksha* in apparently healthy individuals

For finalizing direction of spread of tail bindu magnetic compass was used. Prior to usage of magnetic compass needle was let to fixed in north and south directions. After that observation were noted spread of Tail Bindu as per directions.

3.Parameters observed during *Taila Bindu Pariksha*

Shape of oil after spread, Direction of spread, Spread Time, Spilt time and area covered was observed. Observations were recorded in following way-

- i. **Shape of oil:** After the oil had completely covered the urine, the shape was recorded. After sketching out the full spread and margins of oil film in computer, a still photograph was taken.
- ii. **Direction of spread:** Direction of spread was recorded by magnetic compass. Later on, grid was used and lines of grid were kept aligned to direction. Direction was noted down by taking account of these lines.
- iii. **Surface area covered:** Blocks of the grid covered by the oil film after complete spread were counted. Counting was done from still photographs.
- iv. **Rate of spread:** Time of spread was calculated from the help of digital clock. Time was recorded at time of dropping of oil and then after complete spread.
- v. **Split time:** After some time, the oil film splits. This time was noted down in all readings.

Indian traditional medicine, or Ayurveda, has a long history. Researchers in India have attempted to reconcile ancient wisdom with modern scientific methods. *Taila Bindu Pariksha* is a mediaeval Ayurvedic diagnostic method for urine analysis that also indicates the prognosis of the medical problem. The goal of this study is to use old knowledge to diagnose and predict the prognosis of medical disorders.

Group I included 30 healthy subjects who were *Vata Prakriti*.

Group II included 30 healthy volunteers of *Pitta Prakriti*.

Group III included 30 healthy volunteers of *Kapha Prakriti*.

“*Rogamadou pariksheta tatoanantaramoushadham*” (Ch. su.20/20)

The Ayurvedic literature recommends that you first diagnose the problem before considering treatment options. The patient's various pathophysiological conditions are evaluated for correct diagnosis and disease status under the broad term Ashtavidha Pariksha. (8 types of investigations).

Ashtavidha Pariksha include the following:

- 1) *Nadi*
- 2) *Mutra*
- 3) *Malam*
- 4) *Jihwa*
- 5) *Shabda*
- 6) *Sparsha*
- 7) *Drik*
- 8) *Akrti*

Mutra Pariksha (urine examination) is one of the diagnostic techniques listed above. It has been given specific emphasis in various mediaeval works such as *Yogaratanakar*, *Basavarajiyam*, *Chikitsasara*, and others. A particular approach for examining the *Mutra*, *Taila Bindu Pariksha*, is described which helps in detecting predominance of dosha status and also helps in determining prognosis of various ailments. For this early morning urine sample should be obtained in a clean oval-shaped open clay *patra* or a clean glass vessel. This should be kept in a steady state and checked closely and thoroughly during sunrise. Under direct sunlight, one drop of *Tila Taila* (sesame oil) is slowly dropped over the surface of urine without causing any disturbance.

The ailment is diagnosed by checking the urine and determining whether or not there is Dosha involvement based on the appearance of urine as well as the spreading of oil drop.

Importance of *Mutra Pariksha*

No direct relation is given about appearance of *mutra* in various illnesses but on different occasions change have descoped characteritics of *mutra* whole dusting signs & symptoms of illness. Few examples of such reflectance's are noted here.

Significance of *Tail Bindu Pariksha*-

Depending upon shape, size, spread of tail Bindu over surface of urine dosha predominance and prognosis of illnesses be assumed.

A) Shape of spread of oil drop –

- 1) 1) *Vataroga* is when Tailabindu creates a snake-like image in his urine (*sarpwat*).
- 2) *Pittajaroga* is urine that forms an "Umbrella" like (*chatrakar*) shape.
- 3) *Kaphaja roga* is when urine spreads like Pearl (*Mukta*).
- 4) In *Vataroga*, the *Taila* takes on a *Mandala* (round) shape; in *Pittaroga*,
- 5) The sickness is called *Kashtasadhya* if the taila drop takes the shape of a *Valli* (creeper), *Mrdanga* (a type of drum), *Manushya* (human person), *Bhanda* (pot) *Chakra* (wheel), or *Mriga* (deer) (difficultly curable).
- 6) A *Khanda* (a fragment of body material), the physician should not cure the patient since the condition is incurable.
- 7) If the drop of *Taila* has the shape of a four-legged, three-legged, or two- legged animal, the patient will die soon.
- 8) If the shape of the drop of *Taila* resembles *Shastra* (sharp instruments), *Khadga* (sword), *Dhanus* (bow), *Trishulam* (three-edged weapon).

B) Apperance of oil drop –

1. In "*Vata*" exacerbated diseases, the patient's urine seems *Pandu varna* (whitish) or slightly "*Nilam*" (Bluish).
2. Urine appears yellowish or *Rakta varna* (reddish) when *Pitta* exacerbation,.
3. When *Kapha* is dominant, urine becomes "*Phenayukta*," or frothy or *Snigdha*.
4. In cases of *Rakta* aggravation, urine turns *Snigdha*, *Ushna* (hot) and resembles blood.
5. Urine looks like *Tandulodaka* (ricewater) in cases of disorders related to '*Ajirna*' (indigestion).
6. Urine appears "smoky" in *Navina Jwara* (acute fever) and the affected passes more urine (*Bahu Mutrata*).

7.Urine in the *Vata-Pitta jwara* is smoky, watery, and heated.

8.Urine in *Vata Shlesmajwara* is white and contains air bubbles.

9.Urine is tainted and mingled with blood in the *Shlesma-Pitta jwara*.

10.Urine gets yellowish and scarlet in *Jirna (Chronic) jwara*.

The colour of Sannipata jwara urine varies depending on the Dosha present. In *Dwandaja*, a state of mixed *Dosha* aggravation, the colour of the urine varies depending on the *Dosha* implicated in the disease's origin. In the state of *Sannipata*, the urine is *Krishna varna* (blackish).

Observation

- i. Observation was made based on the shape, size, and direction of the Tail Bindu sprouted over the surface of urine sample.
- ii. Urine routine and microscopic examination follow parameter were assesses like appear Physical examination (Color, Deposit, Appearance) Chemical examination (Ph, specific gravity, proteins, sugar) Microscopic examination (Red Blood Cell, pus cell, Epithelial cells, Crystals, Casts).

ANALYSIS

In order to do the intergroup comparison with respect to different parameters and to find the correlation between parameters all the quantitative data were changed into qualitative by grading accordingly.

They objective parameters were graded as follows

1. Grading of Appearance:

The appearance or urine was graded into three as follows:

Grade 1: Pale yellow

Grade 2: Reddish

Grade 3: Frothy

2. Grading of Mutra Pramana (Quantity)

The quantity of urine voided per day was graded as follows:

Grade 1: 800-1200 ml

Grade 2: 1200-1600ml

Grade 3: 1600-2000ml

3. Grading of Mutra Pramana (Frequency)

The frequency of urine voided per day was graded as follows:

Grade 1: 4-6 times/day

Grade 2: 6-8 times /day

Grade 3: > 8 times/ day

4. Grading of specific gravity

The specific gravity of urine was graded as follows:

Grade 1: <1.010

Grade 2: 1.010-1.020

Grade 3: > 1.020

5. Grading of pH

The pH of urine was graded as follows:

Grade 1: <6

Grade 2: 6-6.5

Grade 3: > 6.5

6. Grading of pus cell count

The pus cell count of urine was graded as follows:

Grade 1: <0-1

Grade 2: 1-3

Grade 3: > 3



7. Grading of epithelial cell count

The epithelial cell count of urine was graded as follows:

Grade 1: <0-1

Grade 2: 1-3

Grade 3: > 3

8. Grading of epithelial cell count

The oil drop shape of urine was graded as follows:

Grade 1: Circular

Grade 2: Irregular

Grade 3: Oval

9. Grading of Tail Bindu spreading time

The Tail Bindu spreading time was graded as follows:

Grade 1: < 20 sec

Grade 2: 20-40 sec

Grade 3: > 40sec

10. Grading of Direction of Taila Bindu spreading

The Direction of *Taila Bindu* spreading was graded as follows:

Grade 1: < 3cm

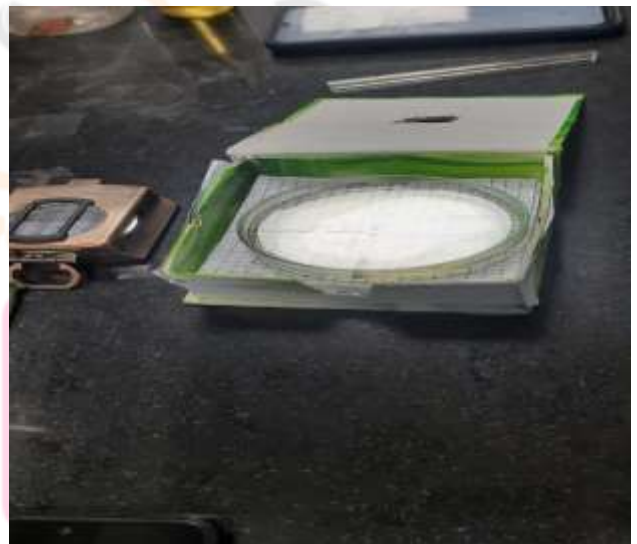
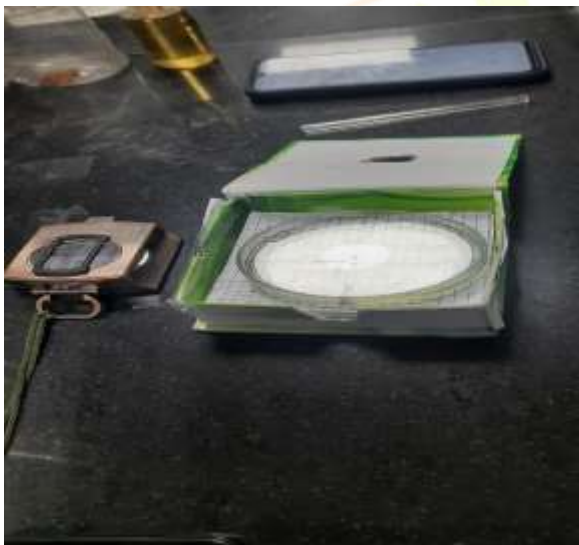
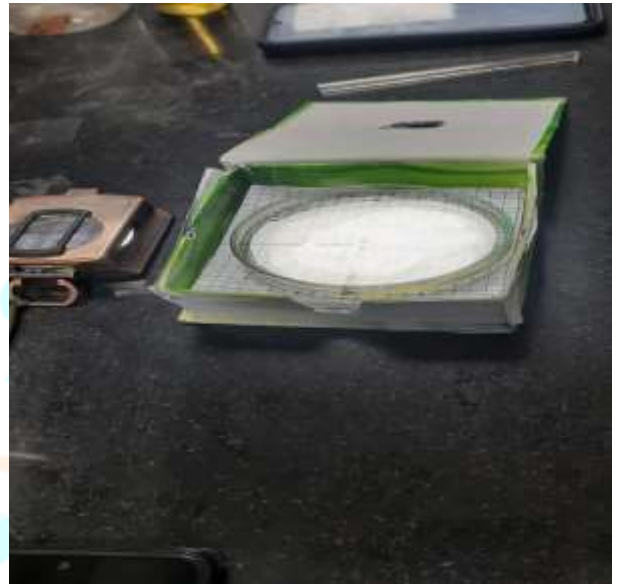
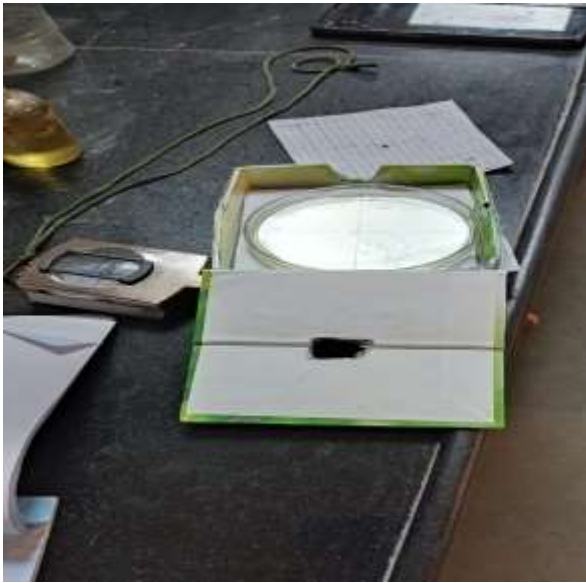
Grade 2: 3-3.5cm

Grade 3: > 3.5cm

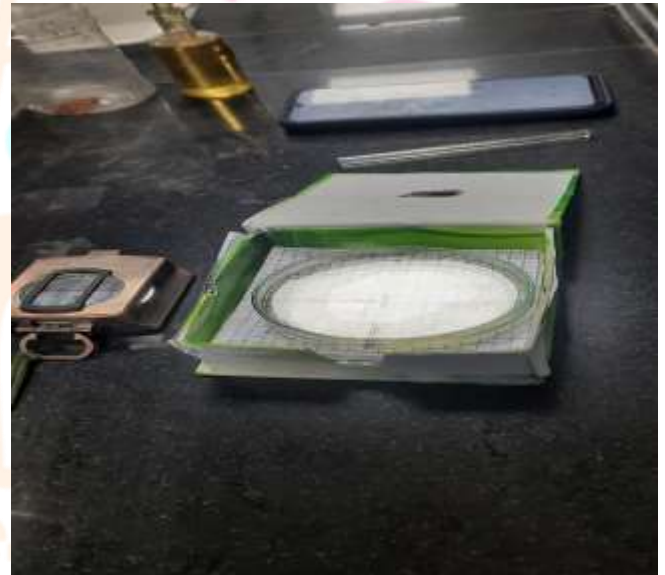
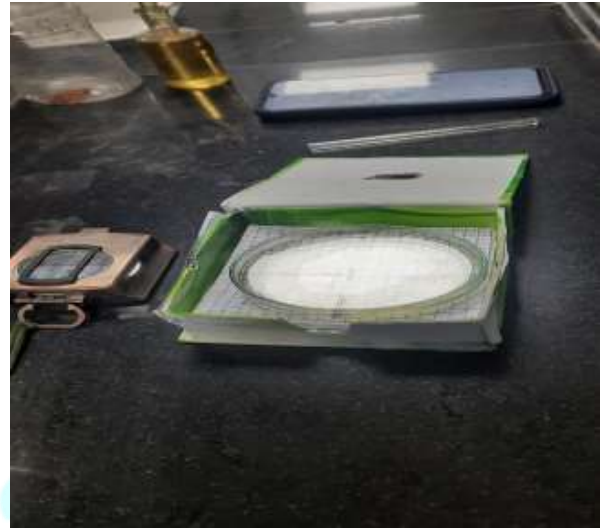


In order to find the correlation of prakriti with different objective parameters of urine Spearman's Rank correlation was used. For this the data on prakriti was also graded as follows:

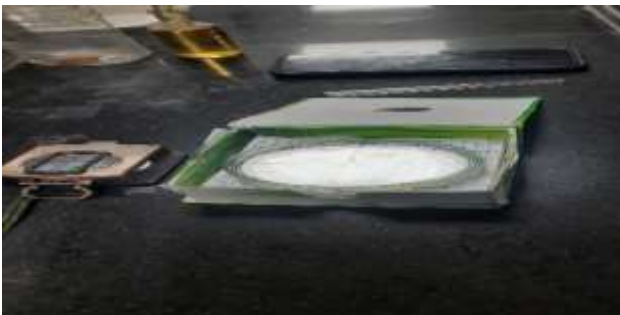
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Research Through Innovation



Research Through Innovation



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- vi Ibid yoga.pur. 1/35, Page no. 7
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