

Clinical Research

A study on *Tailabindu pariksha* – An ancient *Ayurvedic* method of urine examination as a diagnostic and prognostic tool

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Abstract

Indian traditional medicine, *Ayurveda* has a great history. Researchers in India have tried to corroborate ancient wisdom with the modern scientific practices. *Tailabindu pariksha* is a diagnostic tool of urine examination developed by the medieval *Ayurvedic* scholars, and also throws a light on the prognosis of the disease condition. This study aims at using this ancient wisdom to diagnose the medical conditions and to study about their prognosis, and studying about how it can be applied to modern medical practice and its limitations. For the purpose of the study, 30 volunteers were divided into 3 groups. Group I consisting of healthy volunteers, group II of those patients who suffer from curable conditions and group III consisting of patients suffering from chronic diseases which can be regarded as incurable. The urine collection, oil drop instillation and evaluation, were all done according to the guidelines laid down in *Ayurvedic* practices. Upon the evaluation of the color, appearance, consistency and pattern of oil drop spreading in different patients of different groups, it could be seen that the data could be correlated to what has been provided in the literature in majority of the cases. In today's modern medical practices, there is a plethora of urine diagnostic examinations available. These act as an added financial burden to the patients. In the midst of this, making use of *Tailabindu pariksha* for urine examination, will not only prove economical, but also is a time-tested and scientifically proven method. More in-depth studies on larger groups of patients, suffering from various diseases need to be done to standardize the procedure and make it scientifically more acceptable.

Key words: *Ayurveda*, *Basavarajeeyam*, *Nidana*, *Mutra Pariksha*, *Tailabindu Pariksha*, *Yogaratanakara*

Introduction

रोगमादौ परीक्षेत ततोऽनन्तरमौषधम् | (च. सू. २० / २०)
“Rogamadou pariksheta tatoanantaramoushadham” (*Charaka sutrasthana* 20/20)^[1]

Ayurvedic texts suggest to diagnose the disease first and then to think over the treatment. For proper diagnosis of the disease and disease condition, patient's different patho-physiological conditions are examined under the broad heading *Ashtavidha pariksha* (8 types of investigations).

Ashtavidha pariksha include the following:

1. Nadi/Pulse
2. Mutra/Urine
3. Malam/Stool
4. Jihwa/Tongue
5. Shabda/Speech
6. Sparsha/Touch
7. Drik/Eye
8. Akrti/shape

Among the above mentioned diagnostic procedures, *Mutra pariksha*, (examination of urine) has been given special attention to in some of the medieval texts like *Yogaratanakara*, *Basavarajiyam*, *Chikitsasara* etc. Along with the examination of color, appearance and consistency of urine, a special technique for the examination of the *Mutra*, *Tailabindu pariksha*, was developed to diagnose disease conditions and to find out about their prognosis. For this, the patient's early morning (around

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5 o'clock) urine sample is to be collected either in clean oval shaped open earthen pot or a clean glass vessel. This should be maintained in a stable condition and closely and carefully examined during sunrise. For this, one drop of *Tila taila* (sesame oil) is slowly dropped over the surface of urine without causing disturbance under sunlight. The patterns and the distribution of the oil drop on the urine are then considered to determine the diagnosis and prognostic features of the disease.

Review of Literature

Diagnosis of the disease by the examination of urine

By appearance of urine

1. Diagnosis of *Dosha* involvement
 - i. In “*Vata*” aggravated diseases, urine of the patient appears as *Pandu varna* (whitish) or slightly ‘*Nilam*’ (Bluish).
 - ii. In *Kapha* dominated conditions urine becomes “*Phenayukta*”, i.e., frothy or *Snigdha* (cloudy).
 - iii. In *Pitta* aggravation urine appears yellowish or *Rakta varna* (reddish).
 - iv. In case of rakta-aggravation urine becomes *Snigdha*, *Ushna* (hot) and resembles blood.
 - v. In *Dwandaja*, i.e., a state of combined *Dosha* aggravation, mixed colours are seen in the appearance of the urine as per the *Dosha* involved in the diseases causation.
 - vi. In *Sannipata* state urine becomes *Krishna varna* (blackish).^[2-4]
2. Diagnosis of disease involvement^[2]
 - i. In the case of diseases related to ‘*Ajirna*’ (indigestion), urine appears like *Tandulodaka* (rice water).
 - ii. In *Navina Jwara* (acute fever) urine appears ‘Smoky’ and the affected passes more urine (*Bahu Mutrata*).
 - iii. In *Vata-Pitta jwara* - urine is smoky, watery and hot.
 - iv. In *Vata Shlesmajwara* - urine is whitish with air bubbles.
 - v. In *Shlesma-Pitta jwara* - urine is polluted and is mixed with blood.
 - vi. In *Jirna* (Chronic) *jwara* - urine becomes yellowish and red.
 - vii. In *Sannipata jwara* - urine appears in mixed shades depending on the *Dosha* involvement.^[2]

Also, it is said that if urine is placed in a glass jar and appears reddish in the bottom, the patient is suffering from *Atisara* (diarrhoea). If the urine has particles appearing like the droplets of ghee, it indicates *Jalodara* (Ascites). In *Amavata* (Rheumatoid arthritis), urine appears as *Vasa* (fat) or *Takra* (buttermilk). In *Vata jwara*, urine appears reddish or kunkuma (saffron) in colour, and in excessive passage of stools, urine becomes yellowish.^[5]

By shape of the spread oil drop

1. Diagnosis of *Dosha* involvement
 - i. If *Tailabindu* takes a snake like image in the urine, it is *Vata roga*.
 - ii. If urine takes an “Umbrella” shape it is *Pittaja roga*.
 - iii. If urine spreads like Pearl (*Mukta*) it is *Kaphaja roga*.^[2]

Also, it is said that if the *Vata* is predominant, then the *Taila* attains *Mandala* (circular shape); in *Pitta* diseases it attains *Budbuda* (bubbles) shape; in *Kapha* diseases it becomes *Bindu* (globule or droplet) and in the *Sannipata* the *Taila* sinks in the urine.^[3-5]

2. Diagnosis of disease involvement
 - i. If the dropped *Taila bindu* takes a *Chalini* (sieve) shape in the urine sample and then spreads, it is a definite indication of “*Kuladosha*” (genetic disorder).
 - ii. If the dropped *Taila bindu* takes the image of human being (*narakaram*) or skull it indicates ‘*Bhutadosha*’ and is treated accordingly.^[2]

Prognosis of disease by the examination of urine

By spreading nature of the oil

- i. If inserted oil spreads quickly over the surface of urine, that disease is *Sadhya* (curable or manageable).
- ii. If the oil does not spread it is considered as *Kashta sadhya* or difficult to treat.
- iii. If the dropped oil directly goes inside and touches the bottom of the vessel, then it is regarded as *Asadhya* or incurable.^[2] Also, in another text it is mentioned that if the oil does not spread and remains as a droplet in the middle of the urine the disease is considered incurable.^[5]

By spreading direction of the oil

- i. If the oil spreads in the direction of *Purva* (east) the patient gets relief.
- ii. If the oil spreads in the south direction, the individual will suffer from *jwara* (fever) and gradually recovers.
- iii. If the oil spreads in the northern direction, the patient will definitely be cured and become healthy.
- iv. If the oil spreads towards the west, he will attain *Sukha* and *Arogya* i.e. happy and healthy.
- v. If the oil spreads towards the *Ishanya* (Northeast), the patient is bound to die in a month's time; similarly, if the oil spreads into *Agneya* (Southeast) or *Nairutya* (Southwest) directions, or when the instilled oil drop splits, the patient is bound to die.
- vi. If the oil spreads on to *Vayavya* (Northwest) direction, he is going to die any way.^[2]

By spreading shapes of the oil

- i. It is a good prognosis if the oil creates the images of *Hamsa* (swan), lotus, *Chamara* (chowri composed of the tail of Yak), *Torana* (arch), *Parvata* (mountain) elephant, camel, tree, umbrella and house.^[2,5]
- ii. If the *taila* attains the shape of a fish, then the patient is free of *dosha* and the disease can be treated easily.
- iii. If the drop of the *taila* attains the shape of *Valli* (creeper), *Mrdanga* (a kind of drum), *Manushya* (human being), *Bhanda* (pot), *Chakra* (wheel) or *Mriga* (deer) then the disease is considered as the *Kashtasadhya* (difficultly curable).^[5]
- iv. If the spreading oil creates the shapes of tortoise, buffalo, honey-bee, bird, headless human body, *astra* (instrument used in surgery, like knife etc), *Khanda* (piece of body material) physician should not treat that patient as that disease is incurable.^[2]
- v. If the shape of the drop of *taila* is seen as four-legged, three-legged, two-legged that patient will die soon.^[5]

- vi. If the shape of the drop of *taila* is seen in the shape of *Shastra* (sharp instruments), *Khadga* (sword), *Dhanus* (bow), *Trishulam* (type of weapon with three sharp edges) *Musalayudham* (pestle), *Shrugala* (jackal), *Sarpa* (snake), *Vrishchika* (scorpion), *Mushika* (rat), *Marjara* (cat), arrow, *Vyaghra* (tiger), *Markata* (monkey) or *Simha* (lion), then it is understood that the patient will die soon.^[5]

Materials and Methods

- Bottle with lid to collect urine
- Round large mouthed glass bowl measuring around 4-5 inches in diameter and 1.5 inches deep.
- Dropper
- Urine of the patient
- *Tila taila* (Sesame oil)

To maintain uniformity, every patient was advised to sleep early (before 9 PM) with usual intake (2 to 3 glasses) of water during the dinner. Before sunrise, around 5 AM, patients were asked to collect the mid stream urine of the first urination of the day in a clean and neat bottle. Urine thus collected was poured in a round wide mouthed glass bowl (4-5 inches in diameter and 1.5 inch depth), kept on a flat surface and is allowed to settle. After ascertaining that the urine was stable and devoid of wave or ripples or other influence of the wind, the urine was examined in day light at 6.30 AM. *Tila taila* was then taken in a dropper and one drop of the *taila* (approximately 1/20 ml) was dropped over the surface of urine slowly (keeping a distance of 1 mm from the surface of the urine to the lower end of the oil drop) without disturbing/touching the surface. It was then left for a few minutes, and the oil drop pattern in the urine was observed. The inferences were then recorded.

Precautions

- Mid stream of the day's first urine should be considered for the test.
- Bowl in which the urine is kept should be kept on a flat surface and must be devoid of external influences like wind.
- Oil must be dropped only when the urine becomes stable without any movement.
- Oil drop must be dropped from a very low height (1 mm height from the lower end point of the oil drop) without touching the urine with the dropper, because this can disturb the urine and give false results.

Selection of patients

Subjects of either sex between 20 to 60 years of age were selected for the study. In Group I, 10 healthy volunteers without any known chronic or acute ailments were taken. In Group II, 10 patients with curable diseases like *Jvara* (viral fever), *Ajirna* (indigestion), *Atisara* (diarrhea), *Kamala* (Hepatitis-A), *Pandu* (anemia), *Kaphaja Kasa* (Productive cough), *Amlapitta* (Gastritis) were taken. In Group III, 10 patients suffering from chronic disease conditions like *Madhumeha* (Diabetes), *Tamaka Swasa* (Bronchial asthma) and *Amavata* (Rheumatoid arthritis) were taken.

Observations

Total 30 Subjects were selected for the study and were divided

into three groups (10 subjects in each group) as explained below:

Group I: In this group, 10 patients not suffering from any disease were considered.

Group II: In this group, patients suffering from curable diseases like *Jvara* (Viral fever), *Ajirna* (Indigestion) or *Atisara* (Diarrhoea) were taken [Table 1].

Group III: In this group, patients suffering from incurable diseases like *Madhumeha* (Diabetes), *Tamaka Shwasa* (Bronchial asthma), *Amavata* (Rheumatoid arthritis) were taken [Table 2].

Demographic pattern

Among the groups created, maximum number of patients were seen in the age group of 41 to 50 years (13(43.33%) [Table 3]. 15 male and 15 female patients were selected for the study. In Group I and Group II females were more in number and in Group III males were more [Table 4].

Table 1: Distribution of subjects in group II according to the disease condition

| Name of the disease | No. of patients |
|--|-----------------|
| <i>Jvara</i> (Viral fever) | 2 |
| <i>Ajirna</i> (Indigestion) | 2 |
| <i>Atisara</i> (Diarrhoea) | 1 |
| <i>Kamala</i> (Hepatitis-A) | 2 |
| <i>Pandu</i> (Anemia) | 1 |
| <i>Kaphaja Kasa</i> (Productive cough) | 1 |
| <i>Amlapitta</i> (Gastritis) | 2 |
| Total | 10 |

Table 2: Distribution of subjects in group III according to the disease condition

| Name of the disease | No. of patients |
|--|-----------------|
| <i>Madhumeha</i> (Diabetes) | 4 |
| <i>Tamaka Swasa</i> (Bronchial asthma) | 2 |
| <i>Amavata</i> (Rheumatoid arthritis) | 4 |
| Total | 10 |

Table 3: Distribution of subjects in groups I, II and III according to the age for the study

| Age group | Group-I | Group-II | Group-III | Total (%) |
|-----------|---------|----------|-----------|------------|
| 20-30 | 2 | 1 | 0 | 3 (10) |
| 31-40 | 3 | 4 | 3 | 10 (33.33) |
| 41-50 | 4 | 4 | 5 | 13 (43.33) |
| 51-60 | 1 | 1 | 2 | 4 (13.33) |
| Total | 10 | 10 | 10 | 30 (100) |

Table 4: Distribution of subjects in group I, II and III according to the sex for the study

| Sex | Group-I | Group-II | Group-III | Total (%) |
|--------|---------|----------|-----------|-----------|
| Male | 4 | 5 | 6 | 15 (50) |
| Female | 6 | 5 | 4 | 15 (50) |
| Total | 10 | 10 | 10 | 30 (100) |

Results

In group I

Out of the 10 samples, 8 samples were *Pandu varna* (whitish) and 2 samples were slightly yellowish in colour. In all these samples, the oil drop was seen to spread quickly over the surface of urine. The 9 samples out of 10, did not show any specific shape which could be compared to the literature. In one sample, the spread oil showed the shape of a swan [Figures 1 and 2].

In group II

The 8 out of 10 samples were *Pandu varna* (whitish), one sample of *Kamala* (Hepatitis-A) was slight yellowish in color, and another sample of *Kamala* (Hepatitis-A) was reddish yellow in color, in which *taila bindu* showed the shape of demon/ *Vyaghra* (tiger) [Figure 3]. In all these samples, the oil drop was seen to spread quickly over the surface of urine. One of the samples, of a patient with viral fever showed the spread oil drop in the shape of a snake, [Figure 4] and another one was in the shape of *Bindus* (globule or droplet) [Figure 5]. The sample of a patient suffering from *Pandu* (anemia) was in the shape

of a ring [Figure 6]. Another patient suffering from *Kaphaja Kasa* (Productive cough) showed the oil drop taking a shape of *Mukta* (pearls) [Figure 7]. Patients of *Atisara* and *Ajirna* did not show any specific shape.

In group III

All the samples were *Pandu varna* (whitish). Out of these 10 samples, the inserted oil drop was seen to spread quickly over the urine surface in around 8 samples, whereas in 2 of the *Madhumeha* (Diabetes) samples, the oil was seen to spread slowly. In one sample of *Amavata* (Rheumatoid arthritis) oil was seen to spread in the shape of a "sieve", [Figure 8] and in another in the shape of a skull [Figure 9]. In one of the *Madhumeha* (Diabetes) samples, the spreading of the oil drop was seen in the shape of an Owl [Figure 10] and in the remaining *Amavata*, *Madhumeha* and *Tamaka Shwasa* patients, the spreading of oil did not show specific shapes.

Discussion

Diagnosis of a disease involves clinical assessment of the patient and laboratory investigations. The latter, especially

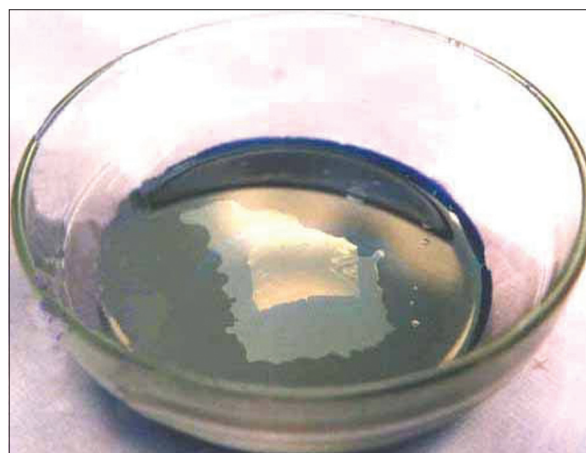


Figure 1: Spreading of oil with out any specific pattern in group I of patients consisting of healthy volunteers



Figure 2: Swan shape of oil spreading in the urine sample of one of the healthy volunteers' of group I during the study

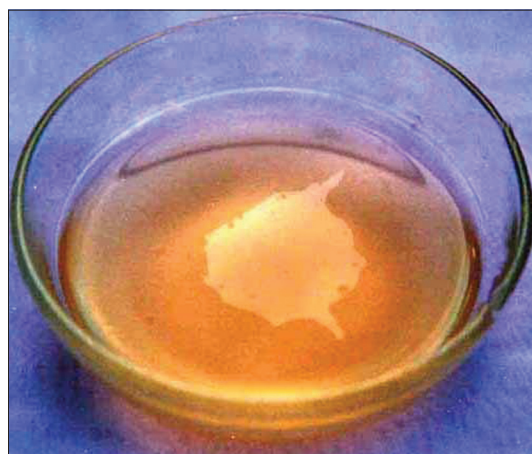


Figure 3: Reddish yellow tinged urine of *Kamala* (Hepatitis-A) patient, with demon or tiger shaped pattern of oil spread in the urine sample of a volunteer in group II which consisted of patients suffering from curable diseases



Figure 4: A sample of a group II patient (which consisted of patients' suffering from curable diseases) suffering from viral fever with the oil spread pattern in the shape of snake

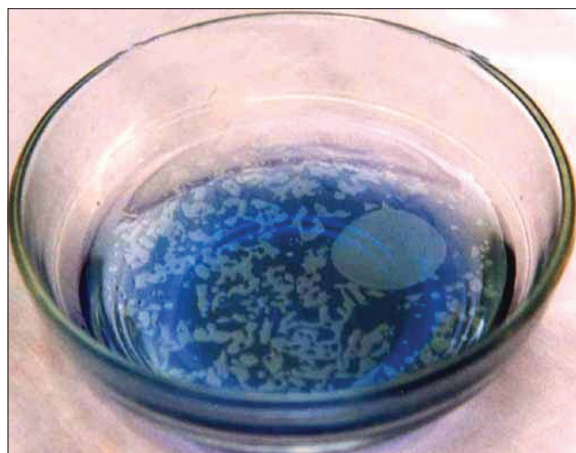


Figure 5: *Budbuda* (bubbles) shape of oil spread in a Viral fever patient belonging to group II of the study which consisted of patients suffering from curable diseases



Figure 6: Ring shape oil spread in the urine sample of a patient suffering from *Pandu* (Anemia) and belonging to group II in the study which consisted of patients suffering from curable diseases

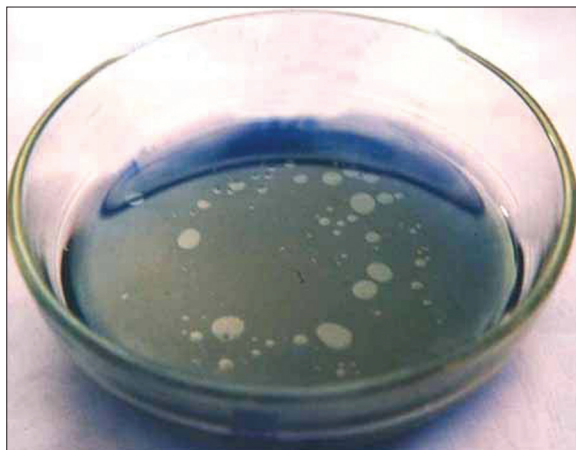


Figure 7: *Mukta* (pearls) shape of oil spread in a patient belonging to group II which consisted of patients suffering from curable diseases in the study and suffering from *Kaphaja Kasa* (Productive cough)

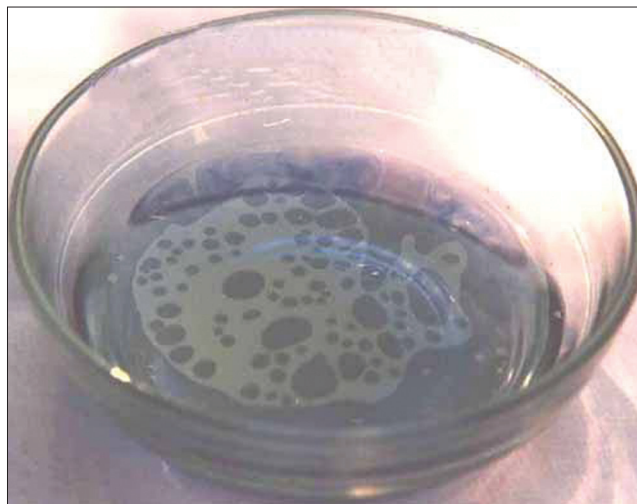


Figure 8: Sieve shape of oil spread in a *Amavata* (Rheumatoid arthritis) patient belonging to group III in the study which consisted of patients' suffering from incurable diseases

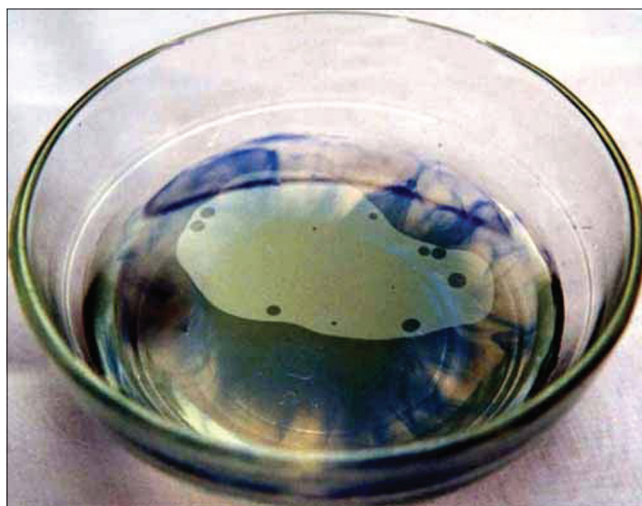


Figure 9: Skull shape of oil spread in a *Amavata* (Rheumatoid arthritis) patient belonging to group III in the study which consisted of patients' suffering from incurable diseases

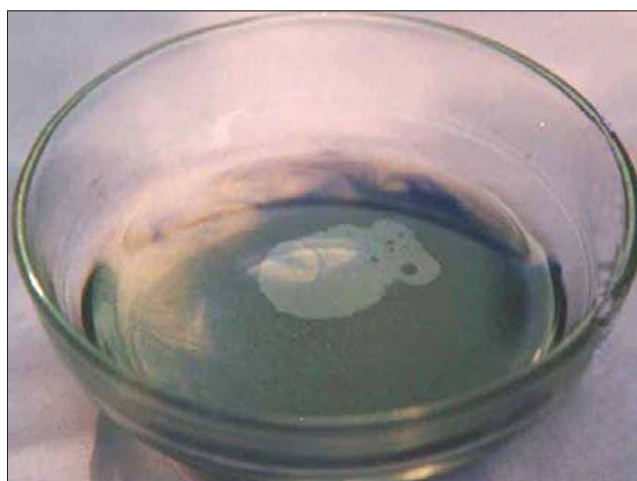


Figure 10: Owl bird shape of oil spread in a *Madhumeha* (Diabetes) patient belonging to group III in the study which consisted of patients' suffering from incurable diseases

the examination of the excretory and secretory products of the body, has always been important for the diagnosis of the disease from the ancient to the modern day times. Now a day, with the advancement of modern technology, clinical assessment is clouded by the diagnostic tools, which have become a costly affair for the patients. So to minimize the cost of the diagnosis, age old practices like *Tailabindu pariksha* mentioned in the Ayurvedic classical texts can be employed.

Though *Tailabindu pariksha* seems to be a crude method, but it has its own importance in diagnosing the disease and prognosis of the patient's condition. It may be an age-old method; however, it is time-tested and has been proved successful by the generations of Ayurvedic community. By corroborating the modern knowledge to this age-old method, its efficacy can be enhanced and new horizons can be explored.

Tailabindu pariksha, is based on the consistency, thickness, density of urine and by seeing the shape of a spread oil drop on the urine surface. These changes in the properties of the urine as compared to normal occur due to the release of various excretory substances in the urine in different disease conditions which can be assessed by the patterns formed by the oil drop during the *Tailabindu pariksha*, and thereby the diagnosis and prognosis can be assessed. According to *Ayurveda*, due to alteration of the body's normal physiological functions during diseases and the production of *Vata*, *Pitta* and *Kapha*, the chemical composition of urine also changes which ultimately changes the pattern of *Tailabindu pariksha*.

In the present study, in Group-I in 9 healthy volunteers' samples, oil did not show any specific shape and in 1 sample it showed the shape of a swan. In classical literature, the shape of a swan is the sign of good prognosis. In Group-II, the snake shape seen in the viral fever patient is a sign of poor prognosis, though viral fever is now a day manageable due to advances in medical sciences. Also, *Bindus* (globule or droplet) of another patient suffering from fever showed predominance of *Pitta dosha*; Ring or *Mandalakara*

of *Pandu* patient showed the predominance of *Vata* and *Mukta* (pearls) shape of *Kaphaja Kasa* (Productive cough) patient showed predominance of *Kapha dosha*. In Group-III, sieve and skull shaped spread of oil in *Amavata* (Rheumatoid arthritis) patients' was pointing towards a poor prognosis. Even today, treatment of Rheumatoid arthritis (RA) is very difficult and both patients' were suffering from RA in multiple joints. Also the patients were in a miserable condition when their urine samples' were collected. Though sieve shape has an inference of genetic involvement in the disease condition, no such involvement was seen here. In one of the *Madhumeha* (Diabetes) samples, the oil spread in the shape of bird owl which also indicates a poor prognosis.

Conclusion

Even though in the present study, the sample size of 30 was small, the findings with respect to the patterns created by the spread of oil drop in majority of the patients matched with the description given in literature. The present study is a basic step to know about the methods and techniques used in *Tailabindu pariksha*. The need for further research on a larger group of patients' suffering from different disease conditions' to arrive at more definite conclusions is being felt.

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