

RELEVANCE OF *MŪTRA PARIKṢĀ* IN DIAGNOSIS & PROGNOSIS OF DISEASES

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ABSTRACT

Diagnosis of disease is based on clinical features, clinical examination and ancillary investigations. For the diagnosis of various aspects of disease and diseased person, several methods have been described in Ayurvedic texts. These can be broadly classified into *Rōga parikṣā* and *Rōgl parikṣā*. Several methods, like *Aṣṭavidha parikṣā*, *Daśavidha parikṣā*, *Dvādaśavidha parikṣā* is an important method of clinical and laboratory diagnosis. *Mūtra parikṣā* which was the main investigative tool in the past is included under *Aṣṭavidha parikṣā*. Parameters like colour, odour, quantity, concentration of various abnormal constituents etc. were being used for diagnosis of different diseases. Beside this, a unique and special technique like *Taila bindu parikṣā*, was described for the diagnosis as well as prognosis of the diseases. A critical review on the diagnosis and prognosis of the diseases based on *Mūtra parikṣā* has been done in this paper.

Introduction

Ayurveda is an ancient Indian system of medicine, which stresses principally prevention of body ailments than simply curing pathological problems. It believes in the treatment of an individual as a whole. Ayurveda says, nature works on the principle of balance. This balance should be maintained. There should be balance inside and outside the body. If we eliminate all toxic imbalances from the body, we can re-establish a state of health.

To achieve this balance more importance is given to the functions of the body than to the structure of the body. The basic principle of Ayurveda states that *Doṣa*, *Dhātu* and *Mala* are foundation of the body.

Our daily life activities are a result of their functioning. As a result of metabolic processes being carried out in the body, essence of ingested food and waste products are constantly formed. Waste products, which are byproducts of our daily activities,

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are called *Mala*. If *Mala* are not excreted from the body, the metabolic process would be impaired and it ultimately leads to the formation of malformed tissues. They are important for normal physiology of body and each of them carry specific functions. *Mala* enable nutrition as well as the elimination of waste. *Mala*, one of the major constituent of body is generally considered as waste product of the body.

It can be divided into-

1. *Āhāra Mala*
2. *Dhātu mala*

Mūtra comes under *Āhāra Mala*. *Mūtra* formation takes place when various types of food materials taken in four fold manner are digested and reduced to *Āhāra Prasādākhyā Rasa* and *Malākhyā Kiṭṭa*. *Mūtra* is said to be the *Kiṭṭa* of *Anna*. Any abnormality in the various stages of *Mūtra* formation namely at the level of digestion, absorption, *Mūtravaha Śrōtas* and organs of transport, storage and excretion leads to *Vyādhi* or pathological state. For the diagnosis of various aspects of disease and diseased person, several methods have been described in Ayurvedic texts. These can be broadly classified into *Rōga parikṣā* and *Rōgī parikṣā*. Several methods like *Aṣṭavidha parikṣā*, *Daśavidha parikṣā*, *Dvādaśavidha parikṣā* are meant for diagnosis. Among these, *Aṣṭavidha parikṣā* is an important method of clinical and laboratory diagnosis which includes *Nāḍī* (Pulse examination), *Mūtra* (urine examination), *Mala* (Stool examination), *Jihvā* (Tongue examination), *Śabda* (Speech examination), *Sparśa* (Examination by touch), *Drk* (Eye examination), *Ākṛti* (Physical Examination). *Mūtra parikṣā* which was the main investigative tool in the past has been constantly ignored by years leading to loss in its importance in present era.

Chronological Study of *Mūtra parikṣā*

Mūtra parikṣā as such in systematic way is not described in *Bṛhatrayī*. Scattered references are available in these texts related to physiological and pathological state. *Caraka* has described qualities of normal urine and urinary changes in different diseases but except the group of diseases known as *Vasti rōga* description pertains mainly to colour change and that too mostly with reference to vitiated *Dōṣa* in a disease, such as in *Jvara*, *Gulma*, *Arśas*, *Pāṇḍu* etc. *Suśruta* and *Vāgbhaṭa* followed more or less the

same pattern. Special contribution of *Suśruta* is description of mechanism of urine formation. Another contribution is that he has given characters of urine of a patient who has become free from *Pramēha* i.e. *Pramēha mukti lakṣaṇa*. He states that if urine becomes clear, transparent free from turbidity and having bitter and pungent taste, then the patient is said to be free from *Pramēha*.

Bhāvamiśra appears to be the first author to include the examination of urine as a separate entity in scheme of general examination of patient. He says that physician should examine eyes, tongue and urine of every patient. *Śārṅgadharma* and *Mādhvakara* have not described urine examination separately. *Yōgaratnākara*, *Basavarājyama* and *Vaṅgasēna saṁhitā* are the only works that deal with *Mūtra parīkṣā* in a systematic way.

According to *Yōgaratnākara*, a physician who is incapable of recording the changes in pulse, urine and tongue kills his patient. In first verse on *Mūtra parīkṣā*, he emphasizes its importance in the recognition of diseased state. The most valuable contribution is new method of urine examination given by him i.e. *Taila bindu parīkṣā*. Same method is described in *Vaṅgasēna saṁhitā* in *Ariṣṭādhikāra*.

The utility of diagnosing diseases by *Mūtra parīkṣā*, was at peak that time but then followed the Mohammedan period when the old literature suffered considerable damage and so practice of urine examination gradually vanished from medical practice.

***Mūtra parīkṣā* as Diagnostic & Prognostic Tool**

Mūtra parīkṣā can be used for diagnosis as well as for prognosis of the diseases. First of all diagnostic aspect will be taken into consideration. Based on the information scattered in various texts pertaining to the abnormalities with respect to various form of odour, colour, quantity etc. one can use urine as important diagnostic tool. For the better understanding of diagnostic aspect, this part will be discussed following the scheme of *Suśruta's* *Ṣaḍvidha parīkṣā*. *Ṣaḍvidha parīkṣā* includes *Pañcēndriya parīkṣā* and *Praśna parīkṣā*.

1. *Ṣabdēndriya parīkṣā*

This method of examination helps to elicit the abnormalities in various diseases by hearing. *Ṣabdēndriya parīkṣā* is considered as one of the important examining

tools under *Ṣaḍvidha parikṣā* by *Suśruta*. But in context of urine examination it has little significance.

2. *Sparśanēndriya parikṣā*

Under this heading temperature and consistency of urine can be taken into consideration. Normal urine is *Uṣṇa*, *Arūkṣa*, *Anavidham*, *Atanutvam*. Thus on the basis of differences in touch only; one can diagnose the disease by observing the changes/ abnormality in urine.

Changes in different pathological states

| Disease/Status | Temperature | Consistency |
|------------------------------------|--------------|---------------------------------|
| <i>Kapha-Vṛddhi</i> | <i>Śītam</i> | <i>Snigdham</i> |
| <i>Udakamēha</i> , <i>Ikṣumēha</i> | <i>Śītam</i> | <i>Picchilam</i> |
| <i>Kṣāramēha</i> , <i>Śītamēha</i> | | |
| <i>Kaphārśas</i> | <i>Śītam</i> | <i>Pichhilam & Snigdham</i> |
| <i>Raktamēha</i> | <i>Uṣṇam</i> | - |
| <i>Kṣaudramēha</i> | - | <i>Rūkṣam</i> |
| <i>Udararōga</i> | - | <i>Snigdham</i> |

3. *Cakṣurindriya parikṣā*

In *Cakṣurindriya parikṣā*, one can assess colour, transparency, consistency, presence of froth, abnormal constituents etc. The *Pitta dhātu* according to Ayurveda is responsible for the production of all colours. *Tridōṣa* also play an important role in affecting the colour of urine as well as other parts of body. Vitiating of *Dōṣa* causes changes in different colour. The *Śārīra dhātu* while passing out through the urine also affects the colour of urine by giving the tinge of own colour. Urine colour is influenced by coloured metabolic wastes (called urochromes), fluid volume (Hydration status), diet and medication.

Some of the changes in colour which are the characteristic features of several diseases are given below.

| Colour of the urine | Diseases in which it appears |
|----------------------------|---|
| Colourless | <i>Vāta-Vṛddhi, Kapha-Vṛddhi, Udakamēha</i> |
| Yellow | <i>Pitta-Vṛddhi, Pittajvara, Pittārśas, Paittika pāṇḍu, Kāmalā, Jirṇa-jvara, Raktapitta, Paittika Gulma</i> |
| Reddish-Yellow | <i>Vāta-Jvara, Jirṇa-Jvara, Paittika Kāmalā, Raktapitta, Mūtrasāda</i> |
| Red | <i>Pitta-vṛddhi, Paittika Mūtrakṛcchra, Raktamēha, Mañjiṣṭhamēha, Raktavāta</i> |

Colourless to pale yellow urine may be due to increased water intake, or associated with diabetes insipidus or end stage renal disease. Dark colour urine is concentrated due to decreased water intake, dehydration or acute renal disease. Yellow-green has increased amount of bilirubin, and may be associated with liver or hemolytic disease. Red urine contains haemoglobin (if it's clear) or erythrocytes (if it's cloudy).

There are number of diseases where transparency and consistency is altered. Urine is described as cloudy when it is not transparent and no visible particles can be seen in the urine. Urine can be cloudy due to presence of various substances like lipids, mucus, cells, casts, crystals and bacteria. In texts, abnormality in transparency and consistency which were observed in various disorders has been tabulated below.

| Name of the disease | Transparency & consistency |
|----------------------------|---------------------------------------|
| <i>Udakamēha</i> | Clear like water |
| <i>Vasāmēha</i> | Opalescent |
| <i>Śukramēha</i> | Like semen |
| <i>Majjāmēha</i> | Like marrow |
| <i>Ariṣṭa Lakṣaṇa</i> | Like <i>ghee</i> , Sinks in water |
| <i>Jalōdara</i> | Like <i>ghee</i> |
| <i>Surāmēha</i> | Clear above & turbid below |

Slight froth is considered to be normal but presence of excess froth denotes pathological state. If urine is shaken vigorously, foam will form due to the presence of proteins in urine. Persistent foam can indicate a proteinuria. Froth like bubbles in *Vāta-*

Vṛddhi, *Vāta-Kapha* disorders, *Mēdaḥkṣaya*, in *Phēnamēha*, *Nilamēha* etc. Abnormal constituents can be assessed by

Cakṣurindriya parikṣā as tabulated below:-

| Constituents | Disease |
|---|--|
| <i>Śukra</i> (Spermaturia) | <i>Śukramēha</i> , <i>Mūtra-śukra</i> |
| <i>Sikatā</i> (Urate crystals in urine) | <i>Sikatāmēha</i> , <i>Aśmarī</i> |
| <i>Rakta</i> (Haematuria) | <i>Uṣṇavāta</i> , <i>Raktamēha</i> , <i>Raktapitta</i> , <i>Mūtrōtsaṅga</i> , <i>Paittika Mūtrakṛcchra</i> , <i>Kṣata Kāsa</i> , <i>Aśmarī</i> |
| <i>Viṭ</i> (Faecal matter in urine) | <i>Vīdvighāta</i> |
| <i>Ōjaḥ</i> (Essence of all tissues) | <i>Madhumēha</i> |

4. *Rasanēndriya parikṣā*

Different *Rasa* of *Śārīra* i.e. body should be examined by *Anumāna Pramāṇa*. With the help of *Āptōpadēśa* (*Rasa* of urine mentioned in different diseases by different *ācārya*) and *Anumāna pramāṇa* we can sketch out state of *Rasa* in various pathological conditions.

Rasa of urine depends chiefly upon constituents present which may be altered by abnormal destruction of *Śārīra dhātu* or by abnormal substances resulting from *Dōṣa-dūṣya sammūrchanā* or if *Śārīra dhātu* pass out as such in urine and affect its *Rasa*.

| Rasa | Disease |
|-----------------------|--|
| <i>Amla</i> | <i>Nilamēha</i> , <i>Amlamēha</i> |
| <i>Madhura</i> | <i>Pramēha Pūrvarūpa</i> , <i>Hastimēha</i> , <i>Ikṣumēha</i> , <i>Śītamēha</i> |
| <i>Madhura-Kaṣāya</i> | <i>Madhumēha</i> |
| <i>Lavaṇa</i> | <i>Raktamēha</i> |
| <i>Kaṭu</i> | <i>Haridrāmēha</i> |

In present era, with the help of modern diagnostic tools we can assess *Rasa* of urine up to great extent. By simply checking presence of glucose we can confirm *Madhura rasa*. *Amla rasa* and *Kṣāra rasa* can be detected by pH of the urine, *Tikta* by presence of bile pigment and bile slats in the urine etc.

5. *Ghrāṇēndriya parīkṣā*

Odour of urine is also altered in different pathological states. There are few diagnostically significant odours such as ammonia odour indicates the presence of bacteria and a sweet or fruity odour is associated with ketones (diabetic ketoacidosis). Some characteristic smell are given for certain diseases in Ayurvedic texts, such as in *Kṣāramēha* it *Kṣāraghnādi*, in *Aṣmarī* it is *Basta Gandhi*, *Visra Gandhi* in number of disease like *Mañjiṣṭhāmēha*, *Raktamēha*, *Pramēha Pūrvarūpa*, *Pittārsas*, *Viḍ Gandhi* in *Viḍvighāta* and so on.

6. *Praśna parīkṣā*

It includes information related to frequency and amount of urine, flow of urine and associated symptoms like burning sensation, pain etc which can be obtained by interrogating patient.

| Quantity of the urine | Name of the condition |
|------------------------------|--|
| Increased | <i>Pramēha</i> , <i>Paittika-Arśa</i> , <i>Aṣmarī</i> , <i>Pittavṛddhi</i> , <i>Sannipāta-Jvara</i> , <i>Nava-Jvara</i> |
| Decreased | <i>Atisāra</i> , <i>Mūtra-Kṣaya</i> , <i>Visūcikā</i> , <i>Udararōga</i> , <i>Vāta-Kuṇḍalikā</i> |

Polyuria is a condition in which frequency of passing urine is increased. There are many pathological causes of polyuria chronic renal failure, diabetes mellitus, diabetes insipidus there are certain conditions in which the total diurnal quantity of urine may or may not actually decrease but the urine is not freely passed out. The events responsible for retention of urine are either concerned with the blockage the passages (*Srōtōrōdha*) or the failure of normal mechansim (*Apānavāyu duṣṭi*). Many of these conditions are included under *Mūtrāghāta* like *vāta vasti*, *vātāṣṭhīlā*.

It can be inferred from the above discussion that clinical diagnosis of certain diseases depends upon various characteristics of *Mūtra*. It is helpful in diagnosing a number of diseases and thus its importance should not be ignored.

Prognostic aspect

Prognosis of diseases can be forecast by merely reviewing physical, mental state or by applying several techniques. *Taila bindu parikṣā* is one of such techniques which was widely practiced in ancient times.

Taila bindu parikṣā

This is a specialized technique of urine examination peculiar to Ayurvedic and Siddha systems of medicine and which can be used for both diagnostic and prognostic purpose e.g. various *Dōṣa* involvement can be known.

Method of *Taila bindu parikṣā*

Awaken the patient in the early morning around 4 am and collect the urine in fresh glass jar and examine urine after sunrise. First few drops of urine should be discarded and collection of middle stream should be done for further examination. The sample of urine is kept in sun for proper examination. One drop of *Tila taila* is put by the help of *Tīrṇa* in collected urine; if oil spreads, it indicates good prognosis, if does not spread signifies difficult prognosis and if it sinks it indicates incurability of disease. Based on spread of oil drop over urine one can have an idea of prognosis of disease as shown in the following table:-

| Name of condition | Velocity, direction & mode of spread | Pattern, form & other characteristics |
|--------------------------|---|--|
| Good prognosis | 1. Slow circular spread (T) 2. Rapid spread (Y.R., B.R.) 3. Eastward spread (V.S.) 4. Westward spread (V.S.) 5. Northward spread (Y.R., V.S.) | 7. Like lotus (T, Y.R., V.S., B.R.) 8. Like jasmine (T) 9. Like <i>Viṣṇu's</i> conch (T) 10. Like throne (T) 11. Like <i>Harṁsa</i> (Y.R., V.S.) 12. Like <i>Kāraṇḍa</i> (Y.R., V.S.) |

| | | |
|-----------------------|--|--|
| | 6. Southward spread (Y.R.) | 13. Like <i>Taḍāga</i> (Y.R., V.S.) |
| Grave Prognosis | 1.No spread (Y.R., B.R.) | 4. Sinks in urine (Y.R., T., B.R.) |
| | 2.Very rapid spread with foams (T) | 5. Stays like a dot (V.S., Y.R., B.R.) |
| | 3. Mixes well with urine(T) | 6. Like <i>Hala</i> (Y.R., V.S., B.R.) |
| | | 7. Like <i>Kūrma</i> (Y.R., V.S., B.R.T.) |
| | | 8. Like bull etc. (T, B.R.) |
| <i>Ariṣṭa lakṣaṇa</i> | Spread towards South, <i>Āgnēya, Nairṭya, Vāyavya,</i> <i>Iṣāna</i> directions | 1. Sinks in urine (V.S.) 2. Moves without spreading (V.S.) |

CONCLUSION

Mūtra parīkṣā which has been given prime importance earlier is constantly being ignored by Ayurvedic physician presently. An amazing diagnostic as well as prognostic tool is lagging behind due to lack of proper research and scientific evaluation of this technique. Thus proper emphasis should be given on its use so that it can be again included in main stream of Ayurvedic Diagnostics. Considering this, our Department has started an initiative to first standardize this technique in collaboration with Department of Bio-Physics, Institute of Medical Sciences, BHU.

Abbreviations

(T):- Therayar, (B.R.):- *Basava Rājīyam*, (Y.R.):- *Yōga Ratnākara*, (V.S.):- *Vaṅgāsēna sāmhitā*

REFERENCES

1. *Agnivēśa* 2006 *Caraka saṁhitā*, based on *Cakrapāṇi Datta's Āyurvēda-Dīpikā*, by Dr Ram Karan Sharma & Vaidya Bhagwan Dash, Chaukambha Sanskrit Bhawan, Varanasi, India.
2. Anonymous 2004 *Yōga Ratnākara*, by Vaidya Sri Lakshmi Pati Shastri, Chaukambha Publications, Varanasi, India.
3. *Basava Rāja* 2007 *Basava Rājīyam*, Indian Institute of History of Medicine, Hyderabad-500095, India
4. *Bhāva Mīśra* 2007 *Bhāva Prakāśa*, edited by Sri Brahmashankara Mishra & Sri Rupa Lalji Vaisya, Chaukambha Sanskrit Bhawan, Varanasi, India.
5. Bhatnagar, L.S. 1958 *Mūtra parīkṣā*, Post Graduate Training Centre in Ayurveda, Jamnagar, India.
6. *Mādhavakara* 1998 *Mādhava Nidāna*, commentary of *Śrī Vijaya Rakṣita & Śrīkantha Datta*, Hindi *Ṭīkā* By Brahmananda Tripathi, Chaukambha subharati Prakashan, Varanasi, India.
7. Singh, R.H. & Udupa, K.N. 1974 *The Kidney & its Regeneration*, Banaras Hindu University, Varanasi.
8. *Śārṅgadhara* 2004 *Śārṅgdhar saṁhitā* with *Dīpikā Ṭīkā*, by Dr Brahmanand Tripathi, Chaukambha Publications, Varanasi, India.

9. *Suśruta* 1999 *Suśruta Saṁhitā* with *Ḍalhaṇa's* Commentary, edited & translated by Priyavrat Sharma, Chaukambha Sanskrit Bhawan, Varanasi, India.
10. *Vāgbhaṭa* 2003 *Aṣṭāṅga Saṅgraha*, translated by Prof. K.R. Srikantha Murthy, Chaukambha Sanskrit Bhawan, Varanasi, India.
11. *Vāgbhaṭa* 1999 *Aṣṭāṅga Hṛdaya*, translated by Prof. K.R. Srikantha Murthy, Chaukambha Sanskrit Bhawan, Varanasi, India.
12. *Vaṅgasēna* 2004 *Vaṅgasēna Saṁhitā*, edited by Nirmal Saxena, Chaukambha Sanskrit Bhawan, Varanasi, India.

सारांश

रोगों के निदान एवं साध्यासाध्यता में मूत्र परीक्षा की उपयोगिता

रीतू शर्मा एवं ए. सी. कर

रोग का निदान उस रोग के लक्षण, चिकित्सीय परीक्षण और सहायक प्रयोगशालीय परीक्षणों पर आधारित होता है। रोग और रोगी के विभिन्न पक्ष का निर्धारण करने हेतु आयुर्वेद में कई पद्धतियाँ बनाई गई हैं। मूलतः इन्हें दो भागों में विभाजित किया जा सकता है— रोग एवं रोगी परीक्षा। कुछ विधियाँ जैसे अष्टविध परीक्षा, दशविध परीक्षा, द्वादशविध परीक्षा का वर्णन आयुर्वेदीय शास्त्रों में उपलब्ध है। इनमें से अष्टविध परीक्षा चिकित्सीय और प्रयोगशालीय परीक्षणों द्वारा रोग निर्णय की प्रमुख पद्धति है। अष्टविध परीक्षा के अन्तर्गत समाहित मूत्र परीक्षा प्राचीन काल में नैदानिकी दृष्टिकोण से मुख्य विधि रही है। मूत्र के वर्ण, गन्ध, मात्रा व अन्य पदार्थों की उपस्थिति आदि विभिन्न पक्षों द्वारा प्राचीन काल में रोगों का निदान किया जाता था। इसके अतिरिक्त एक अन्य विधि तैल बिन्दु परीक्षा का प्रयोग रोगों के निदान और साध्य-असाध्यता निर्णय के लिये किया जाता रहा है। प्रस्तुत लेख में मूत्र परीक्षा द्वारा रोगों के निदान और साध्य-असाध्यता का आलोचनात्मक पुनरवलोकन किया गया है।