

SCIENTIFIC REVIEW OF METHOD OF COLLECTION OF URINE SAMPLE IN AYURVEDA

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ABSTRACT

Urine sample collection is an important part of urine examination. In *Ayurveda* urine collection method is designed in such a way that this is much applicable in helping to diagnosis of certain diseases. It gives a description of urine when, how and in what kind of pot to be stored for the examination. According to *Ayurveda*, at morning time before sunrise, mid-stream fresh urine sample should be collected in a clean glass vessel. This method takes much resemblance with the method of collection of urine sample described in various texts of modern medicine. Hence, a study is aim to prove method described in *Ayurveda* in ancient time have scientific reason.

KEYWORDS: Urine sample collection, Fresh urine sample, Mid

urine sample, Urine sample container, *Astavidha pariksha*, Methods of collection of urine as per modern medicine.

INTRODUCTION

Urine sample is used for the diagnosis of physiological as well as pathological conditions. Improper collection of urine sample may lead to false positive or false negative result. Urine examination is included in "*Astavidha Pariksha*".^[1] All the Ancient *acharyas* of *Ayurveda* has emphasised the importance of abnormality present in urine sample and has described in various contexts as *Mutrakrukchh*^[2], *Ashmari*^[3], *Mutraatisara*^[4], *Ushnvata*^[5], *Mutrasada*^[6], *Prameha*^[7], *Jwara*^[8], *Pandu*^[9], *Arsh*^[10], *Amavata*^[11], *Raktapitta*^[12], *Kamala*^[13] etc.

For examination of urine sample, it is most important that it should be collected properly. In *Ayurvedic* text, *Acharya Yogratnakar*, in the 16th century, has described the systematic method of collection of urine sample.^[14] It gives a description of urine when, how and in what kind of pot to be stored for the examination.

Method of Urine Sample Collection In Ayurvedic Texts

1. Time of Collection

As per *Ayurveda* "*Nisatayayame Ghatika chatustaye*" has been described as proper time that means it should be collected before sunrise i.e. in morning hour.^[15] Similarly, as per modern medicine, the first voided morning urine is the best for routine urinalysis as it contains highest amount of abnormality present in urine sample.^[16,17,18,19,20]

2. Mid-stream Urine

As per *Ayurveda* "*Tasya-adhadharam parihatya madhya dharodabhava tatparidhayitva*"²¹ means the first portion of the stream of the urine should be voided and middle stream should be collected for examination because this reduces the risk of the sample being contaminated with bacteria from the skin of external orifice of genital organ from getting into the urine sample.^[22,23,24]

3. Fresh Sample

As per *Ayurveda*, after collecting urine sample at "*Nisatayayame Ghatika chatustaye*", "*Suryodaya tatsatam parikshet*."^[25] It shows that it should be examined just after sunrise. Thus emphasis on examination of fresh sample because decomposition sets in rapidly specially in warm weather and greatly interfere with the examinations.^[26,27,28]

4. Container

As per *Ayurveda* sample should be collected in "*Mutram dhritam kachmaye cha patre*" transparent container.^[29] The same has been described in modern system of medicine, so that its some physical properties may be examined more specifically.^[30,31,32]

DISCUSSION

Urine is an excretory product through which some metabolic products are pushed out from body. To examine these products, sample should be collected properly. Sample collection has been considered as one the important for testing of urine sample. Each and every aspect has its importance.

Early morning before sunrise, urine is accepted because at this time, it is most concentrated and more likely to detect abnormalities because fluctuation in protein concentration due to physical activity, hydration status, posture and diet are reduced or less influenced.^[33,34] For eg. In Nephritis, a morning specimen is best as it has higher specific gravity and lower pH desirable for preservation of formed element.^[35]

The purpose of collect mid-stream urine to reduce the risk of the sample being contaminated with bacteria from hands, the skin around the urethra, the tube that carries urine out of the body. So, for bacteriological examination mid-stream urine is preferable.^[36]

The urine must be examined while fresh or within one hour of voiding because with time RBC, leucocytes tends to be destroyed due to hypotonicity of the urine. Cast too tends to get decompose. Bacterial contamination of stale urine is frequent and cause alkalization of the urine due to conversion of urea to ammonia and loss of leucocytes and epithelial cells.^[37]

The urine sample should be collected in a clean dry container. For routine examination a clean glass tube or capped jar is used to prevent from contamination such as dirt, lint or fur.^[38] Sunlight or proper light is important for examination of colour and appearance of the urine because there are many disease whose diagnosis is based on urine colour and appearance such as red urine in *Raktamutrata*^[39], green in *Kosthasrit Kamala*^[13], colourless in *Udakmeha*^[40], brown, brown black or black urine in *Raktapitta*.^[12]

CONCLUSION

Methods of collection of urine sample as described in *Ayurvedic* texts has scientific value as it covers almost all important aspects of examination of urine sample. It has same description as described in modern system of medicine.

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