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Ayurveda

# VALIDATION OF TAIL BINDU PARIKSHA AS A PROGNOSTIC TOOL IN MADHUMEHA (DIABETES MELLITUS)

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**ABSTRACT** This study presents a fusion of *Ayurvedic* principles and a Modern understanding of *Tail Bindu Pariksha* focusing on the prognostic aspect of it, in context to *Madhumeha* (Diabetes Mellitus. *Ayurvedic* texts suggests that first every disease has to be diagnosed and then treatment has to be planned as per the disease. For the diagnosis of the disease, many *Pariksha* such as *Trividha Pariksha*, *Shadhvidha Pariksha* and *Ashta-sthana Pariksha* have been mentioned in the *Ayurvedic* texts. *Pariksha* can be used as a diagnostic and prognostic tool for the disease.*Tail Bindu Pariksha* is the key part of *Ashtha-sthana Pariksha*. In this study, we are validating *Tail Bindu Pariksha* as a prognostic tool in *Madhumeha*. As per the Text, over the years the lifestyle of the 21st century has drastically changed and this *Mithya aahar-vihar* of the modern era has given rise to *'Santarpanjanye vyadhi'* such as Diabetes Mellitus(*Madhumeha*). Besides the major medical advancements, Diabetes Mellitus is still continuing to be associated with increased morbidity and mortality, which necessitates the need for an early prognosis to improve the treatment. *Madhumeha* is mentioned among the 20 types of *Prameha* in *Ayurvedic* text. The *Prameha* is self-explanatory which means '*Prabutamutrata*' (excessive urination) and '*Aavilmutrata*' (turbid urination). As per the *Ayurvedic* text, the chemical composition of the *Mutra* also alters in the *Madhumeha*. Hence it results into the varied pattern formed by the *Tail Bindu* in the *Mutra* during the *Tail Bindu Pariksha*. In this study, we have assessed the pattern of spreading nature, shape (on the basis of polarity) and direction of the *Tail Bindu* in the urine in 92 patients of *Madhumeha*. Hence, its applicability in the present time may be evaluated and the new vistas can be explored by co-relating modern science tool with this ancient *Pariksha.*

**KEYWORDS :** *Madhumeha, Santarpanjanya vyadhi, Tail Bindu Pariksha, Gunas, Aavilmutrata, Prabhutamutrata* and *Dosha*

## INTRODUCTION-

*Ayurveda,* the science of life is a unique gift of lord *Brahma* to the mankind and most ancient medical science known so far in the world. The primary objective of *Ayurveda* is to maintain the health of a healthy person and to eradicate the disease of a diseased person. This experience and observation-based science of health was considered the most superior and logically proven in ancient times and continues to shine in the present generation. *Ayurveda* also recognizes the internal environment of the body as a miniature replica of the Universe,where all factors present in the Universe are present in miniature form in our body. Therefore, to remain healthy, a balance between macro and microorganism must be maintained, following the principle of *Swabhavoparam Vada* [6] (Law of natural healing). Hence, any imbalance or changes happening in the Universe have an impact on our body also. To underline the importance of diagnosis of disease *Acharya Charak* [7] has stated that-

*श्परीक्षकारिणो हि कुशला भ्वन्तिश* - *Charak Sutra* 10/5

Means if we diagnose the disease first, it will be easy to treat the disease and further, he says that before starting the treatment one should diagnose the disease.[8]

*श्रोगमादौ परीक्षेत ततोऽनन्तरमौमाधम् ।*
*ततरू कर्म भिाक् पश्चाज्ज्ञानपूर्व समाचरेत् ।।श्- Charak Sutra* 20/20

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 *Roga* and *Rogi Pariksha* such as *Trividha Pariksha*, *Chaturvidha Pariksha, Astha-sthana Pariksha* and *Dashvidha Pariksha*. These are based mainly on clinical parameters. Among them *Astha-sthana Pariksha* is an indispensable tool for the examination of diseased person which is mentioned by *Yogratnakar,* which includes the eight folds of examination such as *Nadi, Mutra, Mala*, *Jihwa* , *Shabda*, *Sparsh, Drikk* and *Aakriti* [9]. *Mutra Pariksha* described in number of *Ayurvedic* texts of Medieval period such as in *Vangasena Samhita*, *Vasavarajjam, Yogtaragini*, *Yogaratnakar* and many more. Also, it is an important tool for deciding the prognosis of diseased person along with *Arişta laksana.* This method of examination is also described in *Siddha* system of Medicine. Gradually in due course of time this method become obsolete. In *Mutra Pariksha* physical and chemical examinations of urine are examined.

The present research work was done on the patients of *Madhumeha* (Diabetes mellitus) to find out the prognosis of the disease with help of the aged old technique *Tail Bindu Pariksha*. In this research work, it has been tried to validate the *Tail Bindu Pariksha* in the patients of *Madhumeha*. In our study, we have taken the urine in a glass vessel over which an oil drop is placed and characteristic of oil spread (Spreading nature, Shape and Direction) is noted down. These parameters are indicative of prognosis of diseases. This study has been done on total 92 patients of *Madhumeha* .

## AIMS AND OBJECTIVES-

- To evaluate the relation of glucose level in urine with *Tail Bindu Pariksha* in the patient of *Madhumeha* (Diabetes Mellitus).
- To evaluate *Tail Bindu Pariksha* as a prognostic tool in *Madhumeha* (Diabetes Mellitus).

## METHODS-

Total 92 patients of *Madhumeha* of age group between 16-60 years irrespective of gender and socio-economic status were selected after thorough history taking and ancillary investigation from OPDs and IPDs of *Acharya Mukundilal Dwivedi Chikitsalaya* of Rishikul Campus, Uttarakhand Ayurved University, Haridwar, Uttarakhand.*Tail Bindu Pariksha* will be carried out after sunrise by a standardized procedure keeping all variables constant such as –

- Container(plastic) for urine
- Shape and size of vessel (glass Petri dish)-4 inches
- Volume of urine-100 ml
- Size of oil drop -20 microliters
- Dropping height of oil from the surface of urine-10 cm
- Variety of sesame oil

Patients were asked to collect the first midstream urine of the day in a neat and clean bottle in *Bhramha muhuruta* i.e the last *Prahara* of night [10]. Various variable parameters such as shape and size of *Patra* (vessel), volume of urine in vessel, size of oil drop, dropping height of oil from surface of urine and variety of *Tila Tail* is kept constant. Urine, thus collected was poured in a petri dish, kept on a flat surface and allowed to settle. After ascertaining that the urine is stable and devoid of wave and other influence of the wind. One drop of the *Tila Tail* (20 micro litre) the help of a micro pipette or dropper was dropped out over the surface of urine slowly (keeping a distance of 10 cm from the surface of the urine to the lower end of the oil drop) without disturbing the surface. It was left for a 1 minute, and then following factors are

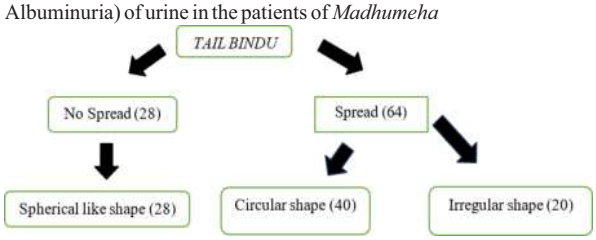
observed such as-
- Spreading nature of *Tail Bindu* in urine -
- No spread
- Spread within 1 min

Shape and Pattern of *Tail Bindu* on urine surface- Circular, spherical and (Irregular)

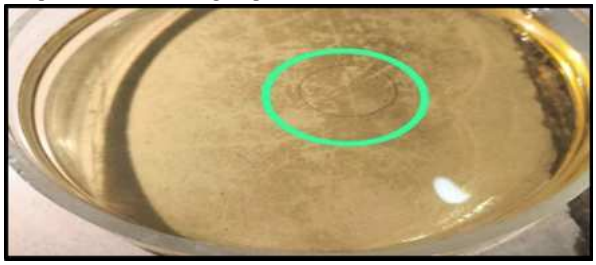
Direction of *Tail Bindu* in urine-
- *Purva* (East) *Uttar* (North)
- *Dakshin* (South) *Pashcim*(West)
- *Nairatya* (South-West) *Isana* (North-East)
- *Agneya* (South-East) *Vayavaya* (North-West)
- No movement in any direction

## RESULTS-

Out of 92 samples, we got to see different spreading nature and shape of the oil drop in the urine. There is a difference in the pattern of oil drop at different concentrations (Glycosuria, Ketonuria, and Albuminuria) of urine in the patients of *Madhumeha*

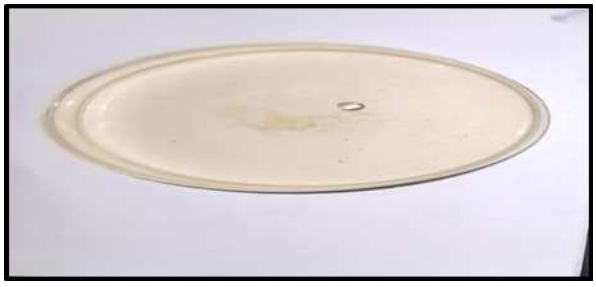



**Flow chart 1-**Fate of *Tail Bindu* in Urine Sample The majority of urine sample exhibits following shapes-



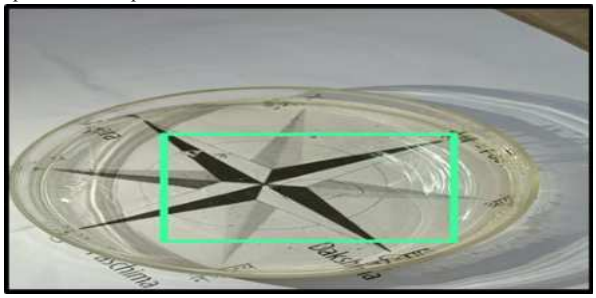
**Picture 1**-Urine sample showing circular shape with well-defined circular margins.

The oil molecules are pulled together firmly minimizing the surface energy and contact with urine creating a circular shape.



**Picture 2-** Spherical shape of oil drop in urine

Oil drop Appears as a dot like structure with curved surface and depth.In urine, the oil drop while minimizing the surface area, forms a sphere-like shape in the urine.



**Picture 3-** Irregular shape ( with no well-defined margins)of oil drop in urine

Shape appears i.e. irregular appears just like a *Kurma* (tortoise) and as per the text it indicates towards bad prognosis.

## DISCUSSION-

The urine is polar and oil is non-polar in nature. As a result of they do not mixes with each other fully and are immiscible in nature. The oil creates shapes such as spherical, circular, and irregular over the surface of urine. The resulting shape is formed because of the concentration of Urine .In Diabetes the normal concentration of urine gets altered due to the presence of glucose, protein and ketones in it.

## CONCLUSION-

Conclusion is the essence of study which provides a forward-looking perspective in the research work. The conclusions drawn from the work done are-
- The present study was a preliminary effect to assess the utility of *Tail Bindu Pariksha* as a prognostic tool in the patients of *Madhumeha* (Diabetes Mellitus).
- In the majority of patients, having glycosuria between 1+ and 2+ attained circular shape. Whereas in Urine sample with glucose (≥ 3+) and albumin (2+ or ≥3+), the *Tail Bindu* attained the irregular shape in Urine.
- In the study, in majority of patients with glucose (1-2+) and albumin (1+) *Tail Bindu* spreads easily in the urine.

In majority of patients, in the urine with glucose (1-2+) *Tail Bindu* moves towards *Uttar.* Whereas in the urine sample with Albumin at 1+ moves towards *Purva* and *Uttar* and between (2-3+) move towards *Agneya* direction.

Therefore, it was found that there was difference in pattern at different constituents of urine.

*Ayurveda* considers *Madhumeha* as a *Yapya vyadhi* and the pattern that we have seen in majority of cases hinds towards the bad prognosis of the *vyadhi*. In this manner, it corresponds little bit with the finding mentioned in *Yogratnakar.*

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