

**EVALUATION OF MUTRA-AVILATA IN URINE OF MADHUMEHA PATIENT WITH
SPECIAL REFERENCE TO URINE PHYSICAL, CHEMICAL & MICROSCOPIC
EXAMINATION: A PILOT STUDY**^{1*}Dr. Krishna Kadam, ²Dr. Amit Bayas, ³Dr. Masarao Bengal

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ABSTRACT

The whole world is fighting against the challenges of non-communicable disease. In *Ayurveda* diabetes referred as in *madhumeha*, a term directly translated as sweet urine disease. Indeed when blood sugar levels rise above a certain threshold, it spills into the urine and therefore can be investigated through urine examination. There is a significant role of *mutra pariksha* (Urine examination) in *madhumeha* (DM). In modern science also explained the same views about urine examination in DM. The *madhumeha* has a key *lakshana* i.e. *avil mutrata*. In 10 turbid samples of urine there are protein, sugar, pus cells, crystals and bacteria. This pilot study of evaluation of *mutraavilata* is important for the diagnosis, prognosis and treatment of the *madhumeha vyadhi* (DM).

KEYWORDS: *Mutraavilata*, Urine Examination, *Madhumeha* and Diabetes Mellitus.**INTRODUCTION**

In *Madhumeha* all *dravadhatus* in reference to *kapha* from *shareera* gets eliminated through *mutra*. This is significant change in physical constitution, chemical contents and biochemical properties in such *mutra*. The abnormal metabolic admixture of *dushtadosha*, *pradushtadhatu* with *mutra* which is nothing but *pradushita mutra* or *saam mutra*. Therefore there is extra addition of *ama* and its constituents to *mutra* which make *mutra* turn *avil*. Diabetes Mellitus is the general term for disease, which means excessive urination, a sweet urine disease. Urine examination is the cheapest source of examination of urine glucose, proteins, and other constituents/infections in diabetes mellitus. It is *Astamahagada Vyadhi*.

AIM

To evaluate *Mutraavilata* in urine.

OBJECTIVES

To bridge the gap between academic and practice To Study *Mutraavilata* in urine.

To study urine physical, chemical and microscopic examination.

Urine Examination

Urine analysis is one of the commonly performed laboratory tests in clinical practice.

- Indication of urine examination

- 1) Suspected renal diseases like glomerulo-nephritis.
- 2) Detection and management of metabolic disorders like DM.
- Collection of urine Sample

First morning midstream for routine examination

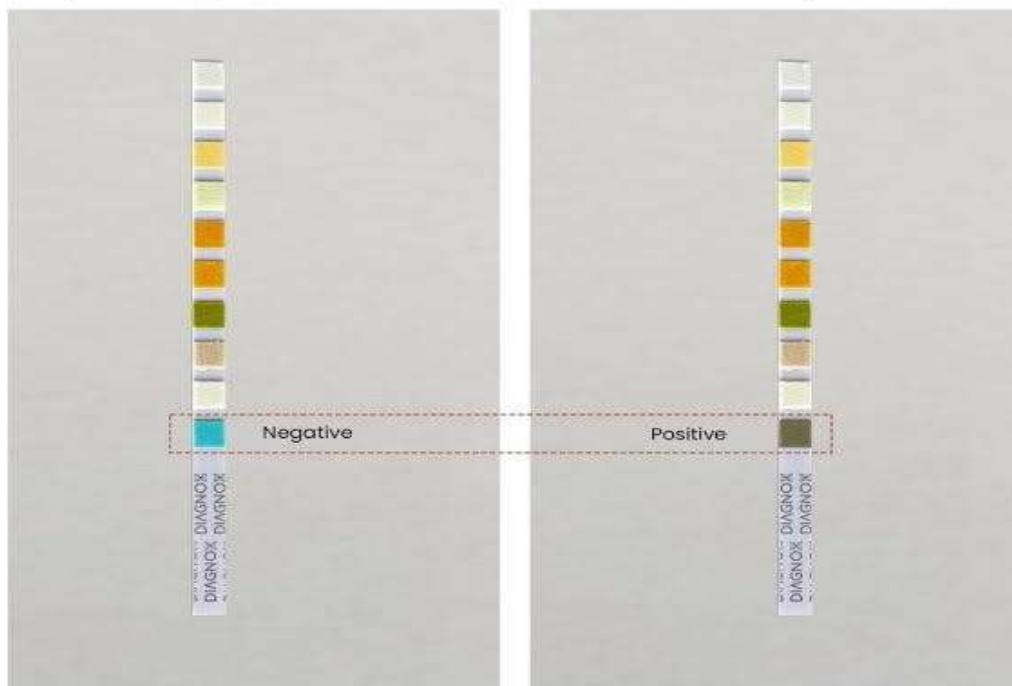
- **Physical Examination**

- 1) Appearance- Normally clear. Foamy urine occurs due to protein presence, uniformly cloudy, do not settle at bottom due to bacteria.
- 2) Specific gravity-It is a measure of concentrating ability of kidneys and is determined to get Information about tubular function. Normal specific gravity 1.003 1.030. It Increases in DM. It can be measured by urinometer or reagent strip method.
- 3) pH-Normal pH-4.6 to 8.0. Acid urine is found in diabetes mellitus. In unexplained metabolic acidosis, measurement of urine pH is helpful in diagnosing renal tubular acidosis. It can be measured by pH paper, pH meter or reagent strip test.

- **Chemical Test**

- 1) **Glucose**-The main indication for testing glucose in urine is detection of unsuspected diabetes mellitus or follow-up of known diabetic patients. Practically all of the glucose filtered by glomeruli is reabsorbed by proximal renal tubules and returned to circulation. Normally very small amount of glucose is excreted in urine (< 500 mg/24 hours or < 15 mg/dl).

Change in the reagent pad color of a urine dipstick due to the presence of glucose in the urine.



- 2) **Proteins** - Normally Kidneys excrete scant amount of protein in urine. Proteinuria refers to protein. Excretion in urine greater than 150mg/24 hours in adult. Quantitative estimation of protein are

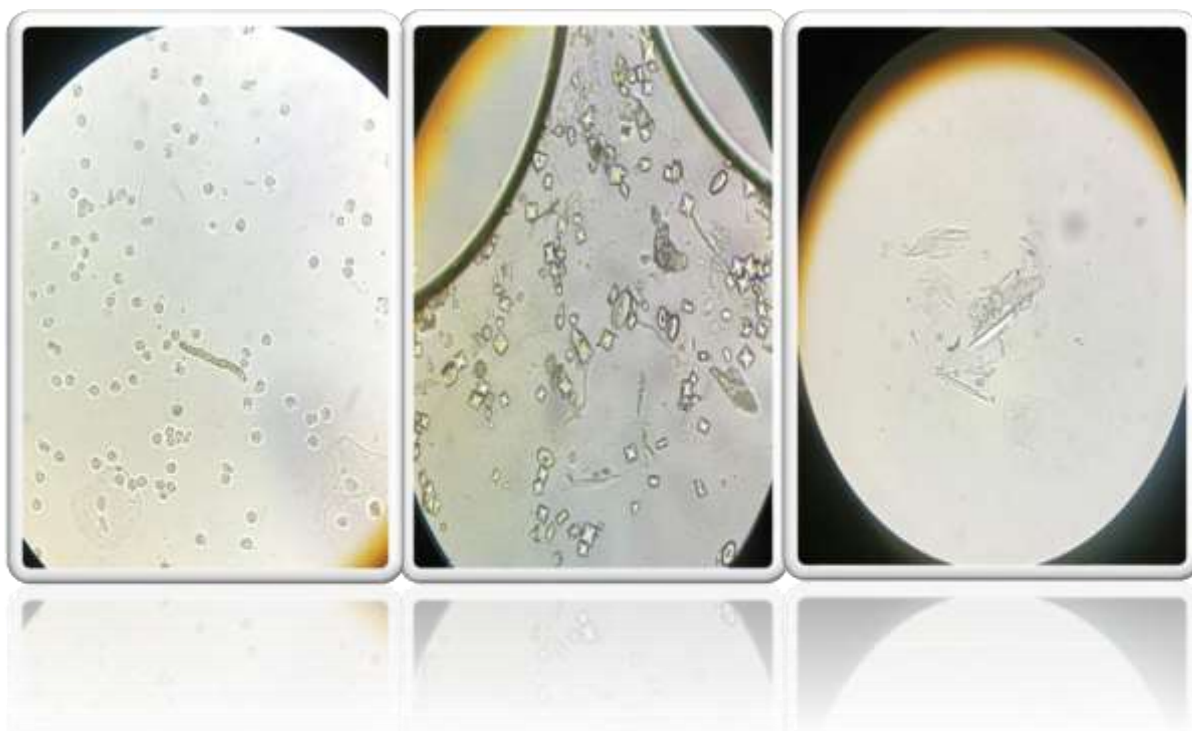
detection of microalbuminuria or early diabetic nephropathy. Microalbuminuria is defined as urinary excretion of 30 to 300 mg/24hours (or 2-20 mg/dl) of albumin in urine.



- **Microscopic Examination**

It includes RBC's (Red Blood Cells), WBC's (White

Blood Cells)/Pus Cells, Epithelial Cells, Casts, Crystals and Bacteria.



A) Pus Cells

B) Crystals

C) Epithelial cells

Avil-mutrata (Turbidity)

1	Crystal Clear Fluid	0
2	Faintly Cloudy or Smoky(turbidity barely visible)	1
3	Turbidity clearly present but newsprint easily read through test tube	2
4	Newsprint not easily read through test tube	3
5	News print cannot be seen through test tube	4



Above scoring is important to decide and choose the turbid samples. We have taken **10 Turbid** (Havingscore 1-4 of *mutraavilata* scoring chart) urine samples from

10 different patients of diabetes mellitus and their physical, chemical and microscopic examinations are done.

Those samples gave us following results

Sr.No.	S.G.	PH	Proteins mg/dl	Sugar mg/dl	Pus Cells/hpf	Cryst-als/hpf	Epithelial Cells/hpf	Bacteria /hpf
1	1.020	6.0	Present (30mg/dl)	Nil	7-8	Uric acid-1-2	1-2	Present(plenty)
2	1.010	6.5	Nil	Present (100mg/dl)	1-2	-	1-2	Present(plenty)
3	1.010	6.5	Present (30mg/dl)	Nil	1-2	-	1-2	Present (plenty)
4	1.020	5.5	Present (30mg/)	Present (100mg/dl)	3-4	-	0-1	Present(plenty)
5	1.005	6.5	Nil	Nil	>20	-	5-6	Present (plenty)
6	1.015	6.0	Nil	Nil	8-10	-	3-4	Present (plenty)
7	1.010	5.5	Trace (15mg/dl)	Nil	1-2	-	1-2	Present (plenty)
8	1.005	5.5	Present (30mg/dl)	Present (100mg/dl)	5-6	Uricacid 2-3	0-1	Present(plenty)
9	1.010	5.0	Nil	Present (100mg/dl)	3-4	-	0-1	Present(plenty)
10	1.020	6.0	Nil	Nil	10-15	-	5-6	Present (plenty)

RESULT

Mutra pariksha is the first prior primary examination to diagnose *madhumeha* (DM). By *Mutra Pariksha* (urine examination) one can assess any running pathology inside the body. There is a significant role of *mutra pariksha* (Urine examination) in *madhumeha* (DM). Urine examination is helpful in Detection and management of metabolic disorders like DM. Abundant urine of high specific gravity is characteristic of diabetes mellitus. There is a significant role of *mutra pariksha* (Urine examination) in *madhumeha* (DM). In modern science also explained the same views about urine examination in DM. In 10 turbid samples of urine there are protein, sugar, pus cells, crystals and bacteria.

DISCUSSION

It is an inexpensive test. *Mutra pariksha* helps to rule out *madhumeha* (DM) in proper time without lengthening the period of disease. Though we are blessed today with the help of modern equipment we should achieve better approach of *pariksha paddhati* to serve the society in health interest, where the time will be spent in proper diagnosis, proper treatment in proper time without lengthening the period of disease to grow in individual. A common people can also understand about abnormalities in *Mutra* and aware become aware of Diabetes. Evaluation of *mutraavilata* is important for the diagnosis, prognosis and treatment of the *madhumeha vyadhi* (DM).

CONCLUSION

Easy to perform. Double voided specimen for best results urine testing for glucose. There are some similarities found in *mutra pariksha* of Ayurveda with modern urine examination. With the help of the above study we concluded that the *mutraavilata* in urine is due to Proteins, Sugar, Pus cells and Bacteria present in that urine sample, this shows the typical signs of *madhumeha*

(Diabetes Mellitus). The *madhumeha* has a key *lakshana* i.e. *avil mutrata*. This pilot study of evaluation of *mutraavilata* is important for the diagnosis, prognosis and treatment of the *madhumeha vyadhi* (DM).

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