



CLINICAL EVALUATION OF MUTRASAMGRAHANIYA KARMA (ANTI-DIURETIC) OF AMRASTHI MAJJA CHURNA (KERNEL POWDER OF MANGIFERA INDICA LINN.) IN THE MANAGEMENT OF PRABHUT-MUTRATA (POLYURIA) AS PER SAMANYA-VISHESHA SIDDHANTA.

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ABSTRACT

Background: Acharya Charaka classified medicinal plants based on their pharmaco-therapeutic properties, providing a valuable reference for Ayurvedic practitioners. In the *Shadvirechanashatashritiya* chapter, he described the *Mutrasangrahaniya (anti-diuretic) Mahakashaya*. According to Ayurvedic texts, *Prabhuta Mutrata* (polyuria) is characterised by increased frequency and volume of urination. This condition is commonly observed in disorders such as *Prameha* (diabetes and metabolic disorders), *Arsha* (haemorrhoids), *Jwara* (fever), and several other pathological states. Polyuria often causes significant social discomfort and embarrassment for affected individuals. In this context, *Amra (Mangifera indica Linn.)*, a plant included in the *Mutrasangrahaniya Mahakashaya*, was selected for a clinical trial to evaluate its efficacy in managing *Prabhuta Mutrata*. Methods: The study included 40 randomly selected subjects based on predefined inclusion and exclusion criteria. *Amrasthi Majja*

Churna (3 g) was administered orally twice daily before meals for 30 days. The primary symptom, urinary frequency during day and night, was assessed using a gradation scale. The non-parametric data obtained from the study were analysed using the Wilcoxon Signed-Rank Test. Conclusion: This study provided evidence to revalidate the concept of *Mutrasangrahaniya Karma* (anti-diuretic action) of *Amrasthi Majja Churna* in the management of *Prabhuta Mutrata* (polyuria), in alignment with the *Samanya-Visheshha Siddhanta* (the principle of similarity and dissimilarity) described in Ayurveda.

Keywords: *Amrasthi majja, kleda, mutrasangrahaniya, prabhut mutrata, polyuria*

INTRODUCTION

In the modern era of fast-paced lifestyles, sedentary habits, improper dietary patterns, and heightened mental stress contribute significantly to the rise of metabolic and other health-related issues. India is rapidly emerging as a hub for lifestyle diseases such as diabetes mellitus, cardiovascular diseases, and kidney disorders. According to Ayurveda, the primary objectives are preserving health and treating diseases [1]. The equilibrium of *dosha* (biological energies), *dhatu* (body tissues), and *mala* (waste products) forms the foundation of good health [2]. In Ayurveda, health (*swasthya*) is defined as the balanced state of *doshas*, *agnis* (digestive and metabolic fire), *saptadhatus* (seven body tissues), and the proper excretion of waste products (*mala-kriya*), all of which play a pivotal role in maintaining homeostasis [3].

The primary *malas* generated through metabolic processes include *purisha* (stool), *mutra* (urine), and *sweda* (sweat). *Mutra* represents the liquid excretory product (*aharmala*), primarily functioning in *kledavahanam* (regulation of moisture) [4]. It helps maintain appropriate levels of *kleda* (dampness) within the body and aids in detoxification by eliminating metabolic waste through urine. The urinary system is crucial in maintaining fluid homeostasis within the body. Proper formation and excretion of *mutra* signify the normal physiological functioning of the body. Any imbalance, whether excessive or insufficient urine formation, can lead to pathological conditions. Therefore, maintaining urinary output within an optimal range is essential for overall health.

Prabhut mutrata (*atimutrapravrutti*): ‘When the *jalyansh* (fluid component) and *kleda* (moisture) within

body tissues increase or become vitiated due to imbalances in *dosha* and *dushya* (pathological factors), the body attempts to eliminate these excesses through increased urination, a condition referred to as *Prabhuta Mutrata* (polyuria). Increased frequency of urination is a hallmark symptom of *Prameha* (metabolic disorders, including diabetes), described in Ayurvedic texts as “*Samany Lakshanam Tesham Prabhuta Avila Mutrata*” (increased quantity and turbidity of urine) [5].

Excessive urination can be managed through *Sangrahan Karma* (retentive action) in *Prabhuta Mutrata*. Ayurvedic *Mutrasangrahaniya* (anti-diuretic) drugs play a crucial role in restoring urinary balance and reducing excess urination.

Mutrasangrahaniya mahakashaya (Anti-diuretic): The *Mahakashayas* are a significant classification in the *Charaka Samhita*, where ten medicinal plants (*Dashemani*) are grouped based on their similar pharmacological actions [6]. The *Mutrasangrahaniya Karma* is a therapeutic action that reduces excessive urination and restores the balance of *Ambu Tatva* (water element) within the body. These drugs effectively regulate both the frequency and volume of urine excretion, as described in the Ayurvedic definition, “*Ati pravrittam mutram yat sangrahaati tat Mutrasangraheeyanam*” (drugs that retain excess urine) [7].

The ten *Mutrasangrahaniya* drugs (*Dashemani*) are *Jambu* (*Syzygium cumini*), *Amra* (*Mangifera indica*), *Plaksha* (*Ficus lacor*), *Vata* (*Ficus benghalensis*), *Kapitan* (*Luffa echinata*), *Udumbara* (*Ficus racemosa*), *Asvattha* (*Ficus religiosa*), *Bhallataka*

(*Semecarpus anacardium*), *Ashmantaka* (*Bauhinia racemosa*), and *Somvalka* (*Vallisneria spiralis*) [8].

The pharmacological actions of *Mutrasangrahaniya* drugs include *Kleda-Shoshaka* (moisture-absorbing), *Shleshmahara* (alleviating excess kapha), *Medohara* (reducing adipose tissue), and *Pramehaghna* (anti-diabetic). These drugs are particularly beneficial in conditions characterised by *Kleda*-dominance, such as *Madhumeha* (diabetes mellitus), *Saam-Jwara* (fever with toxins), *Shwetapradara* (leucorrhoea), and *Arsha* (haemorrhoids), where excessive urination is a prominent symptom.

Amra (*Mangifera indica* Linn.) is a medicinal herb in the *Mutrasangrahaniya Mahakashaya* as described in Ayurvedic texts [8]. Additionally, it is classified under the *Nyagrodhadi Gana* in the *Sushruta Samhita* and is recognised for its *Sangrahi* (retentive) action [9, 10]. *Amrasthi Majja Churna* is the powdered form of the mango seed kernel, which serves as a practical and accessible pharmaceutical preparation. This formulation is readily available, cost-effective, and easy to use. However, its *Mutrasangrahaniya* (anti-diuretic) activity and its safety and efficacy in managing *Prabhuta Mutrata* (polyuria) have not been extensively studied in previous research.

The *Samanya-Visheshha Siddhanta* is a fundamental therapeutic principle described in Ayurvedic classics [11]. According to this principle, similar properties enhance each other's effects, while opposite properties mitigate or counteract one another. In the context of *Prabhuta Mutrata*, urine is dominated by the water and fire elements, whereas *Amrasthi Majja* exhibits a predominance of the earth and air elements. Since these qualities are antagonistic, the use of *Mutrasangrahaniya* drugs like *Amrasthi Majja Churna* helps to counteract excessive urination by restoring balance in the body.

The Ayurvedic Samhitas do not explicitly define *Prabhut Mutrata* as a classical disease with its *Nidanpanchaka* (etiological framework). However, it is recognised as a symptom commonly observed in conditions associated with *kleda* (fluid imbalance). According to Table 1, various terminologies for *Prabhut Mutrata* are mentioned in the *Samhitas*, in-

cluding *Bahumutrata*, *Mutradhikya*, *Prachur Mutra*, *Srusat Mutra*, *Mutratipravrutti*, *Mutrasya Adhikyam*, and *Sabahusho Mehi*.

The review of classical texts has stated that *Prabhut Mutrata* is described as a *Purvarupa* (premonitory symptom) in *Arsha Vyadhi* (haemorrhoidal disease) [12], as a prognostic indicator (*Arishta*) in *Indriya sthana* [13], and as a general symptom (*Rupa*) in various conditions. These conditions include *Sama Jwara* (fever with undigested toxins), *Pittaja Arsha* (haemorrhoids of pitta origin), *Udakameha* (urinary disorders), *Sheeta Meha* (cold-type diabetes), *Hastimeha* (elephantine diabetes), *Vataja Prameha* (urinary disorders of vata origin), *Mansagat Jwara* (muscle-involved fever), *Mutravaha Srotas Dushti* (urinary channel disorders), *Pitta Prakruti Lakshan* (traits of pitta constitution), as well as an indicator during *Garbhavakranti* (foetal development) and *Prasavakala Lakshan* (labour characteristics). These scattered references collectively highlight the diagnostic significance of *Prabhut Mutrata* as a significant symptom in Ayurvedic practice.

The references also state that *Amrasthi* is more prevalent in the *Charaka Samhita* than in the *Sushrut Samhita* and *Ashtang Hridaya Samhita*. *Amrasthi* is described as *Sangrahi* (absorbent), *Stambhaka* (obstructive), *Kledahara* (removes fluid imbalance), and *Vaishandyakara* (clarifying). It is traditionally utilised in the treatment of conditions such as *Atisara* (diarrhoea), *Raktapitta* (haemorrhagic disorders), *Prameha* (urinary disorders), *Yonivyapad* (gynaecological disorders), and *Vrana Chikitsa* (wound management). As per references in *Dravyagunashastra Vidnyana* [14] and *Dravyaguna Karma Siddhanta*, *Amrasthi-majja* (mango seed kernel) is astringent in taste, possesses light and dry properties, has *Sheet Veerya* (cooling potency), and exhibits *Katu Vipaka* (pungent post-digestive effect). It is mentioned in *Purishsangrahaniya Mahakashaya* (formulations promoting stool consolidation) and in the management of various *Pradar Roga* (vaginal disorders). Additionally, it effectively addresses the *Apanvayu* region *Dushti* (vitiation of the downward-moving *Vata*). Therefore, mango seed kernel powder was se-

lected to study its *Mutrasangrahaniya Karma* (urine-retentive action).

Aim: To clinically evaluate the efficacy of *Amrasthi Majja Churna* as a *Mutrasangrahaniya* (anti-diuretic) agent in the management of *Prabhuta Mutrata* (polyuria), based on the principles of *Samanya-Visheshha Siddhanta*.

Materials and Methods:

Selection Criteria for Patients: Subjects presenting with the symptoms of *Prabhut Mutrata* (polyuria) and meeting the inclusion and exclusion criteria were selected from the outpatient department of the designated Ayurvedic hospital. After a thorough examination, detailed case record sheets were completed for all participants.

Inclusion Criteria:

- Subjects exhibiting symptoms of *Prabhut Mutrata* (polyuria).
- Subjects aged between 30 and 60 years.
- Subjects of any gender, religion, caste, marital status, occupation, or socio-economic background.

Exclusion Criteria:

- Subjects with insulin-dependent diabetes or juvenile diabetes.
- Subjects are currently taking diuretic medications.

- Subjects diagnosed with urinary tract infections (UTIs) or muscular deformities of the urinary bladder.
- Subjects with cardiovascular, cerebrovascular, hepatic diseases, renal failure, or prostatic hypertrophy.
- Subjects experiencing secondary emaciation due to prolonged or parasitic infections.
- Subjects who are pregnant, lactating, or have uterine prolapse or fibroids.
- Subjects with immuno-compromised conditions such as cancer or AIDS.

Preparation and Authentication of the Drug:

Mango seeds from the local variety of *Mangifera indica* were collected during the summer season. The seeds were washed thoroughly and dried under sunlight. The seed kernels were manually separated from the hard shells of the mango seeds (Fig. 1). Referred to as *Amrasthi Majja* in Ayurvedic texts and as *Guthali* in Marathi, the kernels were washed in warm water and soaked at room temperature (Fig. 2). They were then cut into small pieces, ground into a fine powder using a grinder, and sieved through mesh no. 01. The prepared *Amrasthi Majja Churna* (Fig. 3) was stored in an airtight container to prevent exposure to moisture, insects, and fungal growth.

The entire sample underwent critical evaluation based on taxonomic and microscopic characteristics. Thin-layer chromatography was performed according to API standards at an authorised research institute to ensure quality and authentication.



Fig.1: A Mango seed along with the Kernel



Fig.2: Mango seed kernels



Fig.3: Mango kernel powder

Intervention: The intervention involved administering *Amrasthi Majja Churna*, a greyish-buff powder prepared from the kernel of mango seeds to the subjects. The churna was carefully packed in sealed polythene bags and provided with measuring scoops and

an instruction sheet. The drug was administered orally in a dose of 3 grams, twice daily, for 30 days. *Lukewarm water* was used as the *Anupan* (vehicle), and the churna was taken *Apankali* (before meals). Monitoring and follow-up assessments were conducted on the 15th and 30th days of the treatment period.

While qualitative and quantitative measurements of urine through the day-night collection over a month were not feasible, the intervention focused on evalu-

ating the treatment's effect on the frequency of micturition during the day and night.

Assessment criteria: The research drug's effect was evaluated based on the frequency of urination using the gradation scale outlined in Table 1.

Table 1: Grading of symptoms - All the symptoms are assessed on a scale of 0-1-2-3.

Sr. No.	Symptoms	Scores	Gradation details
1.	Frequency of urination during daytime	0	3-5 times per day
		1	6-8 times per day
		2	9-11 times per day
		3	>11 times per day
2.	Frequency of urination during nighttime	0	No or rarely at night
		1	1-2 times per night
		2	3-4 times per night
		3	> 4 times per night

Observations and Results:

In this study, 40 patients were enrolled, 39 completed the trial, and one subject dropped out. The demographic data were presented as frequencies and percentages, accompanied by graphical representations.

Table 2: Age group

Age Group (Years)	Number of subjects	Percentage (%)
30-40	11	27.50
41-50	18	45.00
51-60	11	27.50
TOTAL	40	100.00

As shown in Table 2, the maximum number of subjects (45%) belonged to the age group of 41–50 years, indicating that individuals in this active age group are more likely to suffer from *Prabhut Mutrata*. The age groups 30–40 and 51–60 each accounted for 27.5% of the study population.

Table 3: The Frequency of Urination (Day Time)

Frequency of Urination (Day Time)	Mean	Median	SD	SE	Wilcoxon W	P-Value	% Effect
BT	1.72	2.00	0.60	0.10	- 4.786 ^b	0.00000170	53.73
AT	0.79	1.00	0.73	0.12			

Table 3 shows that the P-value is less than 0.05, indicating a statistically significant reduction in the frequency of urination during the daytime after treatment.

Table 4: The Frequency of Urination (Nighttime)

Frequency of Urination (At Night)	Mean	Median	SD	SE	Wilcoxon W	P-Value	% Effect
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BT	1.74	2.00	0.59	0.10	- 5.325 ^b	0.00000010	70.59
AT	0.51	0.00	0.56	0.09			

As shown in Table 4, the P-value is also less than 0.05, suggesting a statistically significant reduction in nighttime urination after treatment.

These findings collectively demonstrate that the intervention significantly reduced the frequency of urination both during the day and at night.

DISCUSSION

The conceptual study highlights that *Prabhut Mutrata* is a general symptom commonly observed in *Kleda-Pradhan Vyadhi* (disorders with fluid imbalance), such as *Vataja Prameha*, *Pittaja Arsha*, and *Saama Jwara*. *Kleda* refers to the wetness or moisture in the body, predominantly associated with the *Jal Maha-bhuta* (water element). Excessive *Kleda* formation results in *Bahumutrata* (excessive urination).

Amrasthi Majja (mango seed kernel) is characterised by the dominance of the air and earth elements, whereas the water and fire elements dominate urine. The properties of *Amrasthi* include *Laghu* (light), *Ruksha* (dry), *Kashay Rasatmak* (astringent taste), *Sheet Veerya* (astounding potency), *Katu Vipaka* (pungent post-digestive effect), *Grahi* (absorbent), *Shoshak* (drying), and *Kapha-Pittahar* (pacifying Kapha and Pitta). These properties are opposite to those of *Kleda* and urine. According to the Ayurvedic principle of *Samanya-Visheshha Siddhanta* (principle of similarity and dissimilarity), similar qualities enhance an effect, while opposite qualities reduce it (*Rhas Hetu Visheshstu*). Thus, *Amrasthi Majja Churna* acts as a *Mutrasangrahaniya* (urine-retentive agent) by counteracting the excessive *Kleda*.

The clinical study findings reveal that most subjects belonged to the 41–50 age group, a highly active phase of life. The intervention significantly reduced the frequency of urination during both the day and the night, as evidenced by a P-value of less than 0.05. However, this study had certain limitations. It was unable to assess the intervention's effect on urine quality and quantity, focusing solely on urination frequency. Future research could explore additional parameters, such as sugar levels and the impact on bladder muscles, to gain a more comprehensive un-

derstanding. Moreover, there is scope to study the *Mutrasangrahaniya Karma* (urine-retentive action) using other drugs from the *Mutrasangrahaniya Mahakashaya* in combination or individually to broaden the therapeutic applications.

CONCLUSION

This study clinically validated *Amrasthi Majja's Mutrasangrahaniya* (urine-retentive) action in managing *Prabhut Mutrata* (excessive urination), as traditionally described by Acharya Charaka (*Aptapramana*). Using *Yukti* (rationality), *Anumana* (inference), and *Pratyaksha Pramana* (direct evidence), the findings demonstrated significant reductions in urination frequency.

The conceptual and clinical application of *Samanya-Visheshha Siddhanta* confirmed the efficacy and safety of *Amrasthi Churna* as a *Mutrasangrahaniya* agent. This study underscores its therapeutic potential in managing *Prabhut Mutrata* while aligning with Ayurvedic principles.

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