

International Research Journal of Ayurveda & Yoga

Vol. 5 (11),117-124,Nov,2022

ISSN: 2581-785X; <https://irjay.com/>

DOI:10.47223/IRJAY.2022.51115



Role of *Mutravegadharana* (Suppression of Urine Urge) in the causation of *Mutravahasroto Dushtijanya Vikaras* (Urinary Tract Diseases) – An Appraisal

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Article Info

Article history:

Received on:10-10-2022

Accepted on: 25-11-2022

Available online: 30-11-2022

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ABSTRACT:

Ayurveda is an ancient medical system that emphasizes holistic health. Indian sages described a healthy human lifestyle thousands of years ago. Ayurveda aims to maintain healthy people's health and to cure diseases. *Vegadharana* has been identified as a major cause of illness and disease. *Mutra Vegadharana* is one cause of *Mutravaha Srotas Vikaras*. *Mutravaha Srotas Vikaras* are conditions that affect the kidneys, ureters, bladder, and urethra, as well as other parts of the urinary tract. *Mutrakrichchhra* (Urinary Tract Infection), *Mutraghata* (Obstructive Uropathy either mechanical or functional), *Prameha* (Obstinate Urinary Disorders including diabetes) are some common diseases of the urinary system. It is estimated that 150 million UTIs occur yearly on a global basis. Ignorance of these diseases can lead to some serious renal complications. Suppression of urine urge prevents the passage of urine; keeping it inside the bladder for too long creates an environment where such diseases can develop. Here, an effort is made to explain how *Mutra Vegadharana* and *Mutravaha Srotas Vikara* are related.

Keywords: Diseases of Urinary Tract, *Mutra*, *Mutravega*, *Mutravegadharana*, and Suppression of urine urge, *Vegadharana*

INTRODUCTION

The aim of Ayurveda is to maintain healthy people's health and to cure diseases.¹ The World Health

Organization, in the twenty-first century also emphasizing on 'Lifestyle Disorders',² and fortunately, Ayurveda has a lot to offer in this field. Total health is a lifelong journey



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that requires daily effort. That is why an emphasis has been placed on disease prevention. To stay healthy, Ayurveda provides a detailed description of different regimens based on seasonal and diurnal variations. *Vegadharana* has been identified as a major cause of illness and diseases³. *Acharya Charaka* mentioned thirteen types of *Adharneeya Vegas*,⁴ and *Acharya Sushruta* mentioned the same thirteen *Vegas* under the disease '*Udavarata*'.⁵ It is crucially important to respond to such urges rather than suppress them as they arise. One of the most common *Adharneeya vegas* is the *Mutravegadharana*. It is the first natural urge explained by *Acharya Charaka* because it occurs far more frequently than other urges. It is an unavoidable daily desire. Suppressing the urge to urinate will undoubtedly affect the channel through which urine flows and is excreted from the body. As a result, *Mutravegadharana* has an effect on the *Mutravaha Srotas*.

Srotas

The smallest and most refined transport mechanism in the human system is called a *Srotas*. Both the development of the diseased state of the body and the normal state of the body are equally attributable to these *Srotas*. *Acharya Charaka* has described *Srotas* is the structure through which the *sravanakriya* takes place.⁶ Mainly, there are two types of *Srotas*: 1) *Bahirmukha Srotas* having external openings or apertures). 2) *Antar-mukha Srotas* (having openings within the body) also known as *Sukshma Srotas* (microscopic channels) or *Yogavahi Srotas*, are the body's internal pathways. There are thirteen major *Antarmukha Srotas*, according to *Acharya Charaka*. There are eleven pairs of *Yogavahi* or *Antarmukha Srotas*, according to *Acharya Sushruta*. *Sukshma* (subtle) and *Mahan* (gross) *Srotas* are the two sorts of *Srotas* that *Kashyapa* has discussed. *Sukshma* types *Srotas* include the *Nabhi* (umbilicus) and *Roma Koopa* (hair follicle), whereas *Mahan Srotas* are nine in number, with two in the lower body and seven in the head.⁷ The term '*randra*' is introduced as a synonym for '*Srotas*' by *Acharya Sharangdhara*. In a male, there are ten *randras*, or one in each of the eye, nose, ear, urethra, rectum, mouth, and head. A woman has three more, one each in two *stana* (mammary glands) and third one in *yonimarga* (Female Reproductive Tract).⁸ The *Srotas* is derived from the root "*Sru*" *dhatu*. The word "*Sru*" means to exude, ooze, or filter. According to *Acharya Charaka*, the definition of the term *Srotas* is "*Sravanat Srotansi*,"⁹ which indicates that anything flows out or passes through. Thus, the channels which carry '*Mutra*' can be referred to

as *Mutravaha Srotas*.

Mutravaha Srotas

Acharya Sushruta describes *Basti* and *Medhra* as *Moolasthanas* (root) of *Mutravahasrotas*¹⁰ whereas *Acharya Charaka* describes *Basti* and *Vankshana* as *Moolasthanas* of *Mutravahasrotas*¹¹, respectively. Many diseases have been associated with *Mutravaha Srotas* in Ayurvedic texts. The *Mutravaha Srotas*'s (urinary system) function is to form and excrete urine. The description of the urinary system is scattered throughout the *Ayurvedic* classics. As a result, using modern science, anatomical descriptions of the urinary system can be correlated to *Mutravaha Srotas*. *Mutravaha Srotas* (Urinary System) is associated with the following structures:

1. *Vrikka*
2. *Mutravaha Nadis*
3. *Mutravaha Dhamanis*
4. *Mutravaha Siras*
5. *Gavini*
6. *Basti*
7. *Mutrapraseka*

1. Vrikka (Kidney)

According to *Acharya Sushruta* *Vrikkas* are developed from the essence of *rakta* and *meda*¹². *Vrikka* is a derivative of the *matrijabhava* (maternal constituents).¹³ *Vrikkas* are two in number and they are situated in *koshta*, as it has been enumerated under the *koshthanga* by various *Acharayas*. There is no explicit mention of *Vrikka*'s role in urine production in any of the *Ayurvedic* classics.

2. Mutravaha Nadis (Ureter)¹⁴

According to *Acharya Sushruta*, *Mutravaha nadis* are situated between *Pakvashaya* and *Basti*. It transports the *Mutra* from the *Pakvashaya* to *Basti*, like the rivers fill the ocean with water. It secretes the urine without break from both sides in to the *Basti*, this is situated in pelvic region with opening downwards. *Acharaya Vagbhatta* agrees with the opinion of *Acharaya Sushruta*.

3. Mutravaha Dhamanis (Renal arteries)

Acharaya Sushruta has described the thirty *adhogami-dhamanis* or root of the human body. The root of these *dhamanis* is umbilicus and heart and lies between *Amashaya* and *Pakvashaya*. It carries urine to the *Basti* along with *Vata*, *Purisha*, *Shukra*, *Artva*, etc. to downwards. Due to heat of *pittashaya* it divided the *ahara*

into two parts - one is *Ahara Rasa* and second is *Jaliya Rasa*.¹⁵

4. *Mutravahasira* (Renal veins)

There is no reference available with *Brihatrayee* about *Mutravaha Sira*, but *Acharya Sharangadhara* speaks about *Drava Mala* of digested food being transported to *Basti* by *Sira* i.e. *Mutra*. As per commentary on *Sharangadhara Samhita* by *Acharya Aadhamala*, the *Siras* are concerned with *Aahara Jala* transported to *Basti* through *Mutravaha Sira*.¹⁶

5. *Gavini* (Ureter)¹⁷

These are two in number. It originates from the *Vrikka* (Kidneys). It transports urine from the *Vrikka* to the *Basti*. *Gavini* is described in *Vedic* literature. Urine is obstructed in the *Antra* (Intestine) and the both *Gavinis*. *Mutra* should be excreted from there. Considering all the descriptions of the entire urinary system, the *Gavini* can be related to Ureters.

6. *Basti* (Urinary Bladder)

Basti is an empty organ. *Vayu* enters the combination, which is created by the essence of *Rakta*, *Kapha*, and *Pitta*. The heat of *Pitta* acts on *Rakta* and *Kapha*, transforming them into the shape of the *Basti* in the abdomen¹⁸. *Basti* is a derivative of the *matrijabhava* (maternal constituents).¹⁹

Function- *Basti* is the receptacle of urine in to which all the channels of the body carrying liquid element.²⁰ *Basti* is the receptacle of impure matter so it is called *maladhara* and forms the primary seats of *Prana*.²¹ It has been enumerated under *Sadyopranaharamarma*, which if perforated may causes death within seven days.²² *Acharaya Chakrapani* has also stated that *basti* is equivalent to *Mutrashaya*.²³

7. *Mutrpraseka* (Urethra)²⁴

It is the outlet of *Bastimukha*, which can be identified as urethra. In male it carries both *Mutra* and *Shukra* while in female only *Mutra*. It is two *angulas* in females and one *angula* in female child and four in males.

Mutravahasrotas Dushti Hetu (Cause of Urinary Passages Diseases)

In general, diet and lifestyle that are favorable for *dosha* (similar in characteristics to *dosha*) but unsuitable for *dhatu* (dissimilar in properties to *dhatu*) produce morbidity in *srotamsi*.²⁵

The morbidity of *Srotas* is characterized by increased flow, blockage, nodule formation, and flow of physiological fluids or contents in the incorrect or opposite directions.²⁶

The *Mutravaha Srotas* are affected by the ingestion of

water, food, and coitus during the urge for micturition, as well as the suppression of the urge for micturition, particularly in those suffering from wasting and trauma.²⁷

The symptoms *Mutravaha Srotas Dushti* include excessive excretion, excessive obstruction or suppression of urine, vitiated, diminished or frequent, thick urine with pain.²⁸

The recommended treatment plan for *Mutravaha Srotas* morbidities should be the same as that described for *Mutrakrichchhra* (dysuria).²⁹

So, keeping this in view to establish a bridge between *Mutravegadharana* and *Mutravahasrotodushhtijanya vikaras* (disease of Urinary tract), the present work has been taken to critically analyze *Mutravaha Srotas* through *Brihatrayi* correlate them in the light of contemporary medicine and also to explore the effect of *Mutra Vegadharana* as a *Mutravaha Srotasdushti hetu*.

MATERIALS AND METHODS

Materials related to *Mutra*, *Mutravaha Srotas*, *Vega* and *Vegadharana* were extensively collected from classical texts like *Charaka Samhita*, *Sushruta Samhita* and *Ashtanga Hridaya* with their available commentaries. The obtained literature were critically analyzed and reorganized systematically to frame the present review article.

RESULTS

There are many diseases described in *Ayurvedic* classics which are directly related to *Mutravaha Srotas*. Some diseases are systemic disease but these have some symptoms related to *Mutravaha Srotas*.

Disease Related to *Mutravaha Srotas*

1. *Mutrakrichchhra*
2. *Mutraghata*
3. *Mutrashmari*
4. *Nirudha Prakash*
5. *Mutraja Viridhi*
6. *Mutrodavarta*
7. *Mutravruta-vata*

Some systemic diseases which are not having direct involvement of *Mutravaha Srotas* but having the Symptoms of *Mutravaha Srotas Dushti* like

1. *Prameha*
2. *Mutradata Raktpitta*
3. *Aamaja Jwara*³⁰
4. *Atisara*³¹
5. *Aamvata* etc.

1. **Mutrakrichchhra** (Urinary Tract Infection)

Difficulty in micturition or dysuria is known as '*Mutrakrichchhra*'. Almost all the *Acharyas* except *Vagbhata* have described eight types of *Mutrakrichchhra*. *Acharya Charaka* has described in the *Siddhi Sthana* that a person indulging in sexual intercourse with an active urge to micturate may cause the *Mutrakrichchhra*.³² In the seventh chapter of *Sutra Sthana*, *Acharya Charaka* mentions *Mutrakrichchhra* as one of the symptoms of *Mutravegadharana*.

2. **Mutraghata** (Retention of Urine)

In *Sutrasthana*, *Acharya Charaka* lists eight different kinds of *Mutraghata*. Furthermore, thirteen other *Bastiroga* (Urinary Bladder Disease) are detailed in *Siddhisthana* under the term '*Mutradosha*',³³ which are comparable to those of *Mutraghata* as mentioned in *Sushruta Uttaratantra*. *Acharya Sushruta* describes twelve different types of *Mutraghata*.

3. **Mutrashmari** (urolithiasis)

As one of the *Ashtamahagada* (group of eight dreadful diseases), *Mutrashmari* can alter the structures and physiology of the urinary system. It is described as *Mutrakrichchhra* in the *Charaka Samhita*. *Vataja*, *Pittaja*, *Kaphaja*, and *Shukraja* are the four kinds of *Ashamari* that *Acharya Sushruta* described.³⁴

Mutra Vegadharana is one of the causes of *Mutrashmari*, so suppression of micturition may lead to urinary stone formation.³⁵

4. **Niruddha Prakash** (Phimosis)

Niruddha Prakash (Phimosis) is mentioned by *Sushrutacharya* in the *Kshudraroga*.³⁶ It is referred to as *Niruddha-mani* and is a part of *Guhyaroga* in *Ashtanga Samgraha*.³⁷ *Vatadosha* vitiated *Shishnacharma* (prepuce) obscures *Mutrasrota* and conceals *Mani* (glance). This results in painless *Mandadhara* (slowed urine flow).

5. **Mutrodavarta**

Mutrajaudavarta can be classified as: (a) *Vegavarodhaja*, caused by suppression of micturition, (b) *Apathyaja*, due to indiscretion in diet and activity and (c) *Upadravarupa*, as a complication of other diseases.

Symptoms of *Mutraja Udavarata* are intense and frequent pain in urinary bladder, cardiac region, pelvis, abdomen, and also severe pain in back and sides of chest; flatulence, nausea, cutting pain, piercing pain, indigestion, inflammation of urinary bladder.³⁸

6. **Mutraja Virddhi** (Hydrocele),

The practice of voluntarily holding urine is the cause of the disease known as *Mutraja-vriddhi* (hydrocele),

characterized by softness and fluctuation on the surface of the inflated scrotum that resembles a skin bladder filled with fluid.³⁹

7. **Mutravrita Vata**

This is *Vatavyadhi* and *Vegadharana* is one of the causes of *Vata* vitiation. *Mutravritavata* gives rise to distension of the bladder and infrequent micturition.⁴⁰

8. **Mutravridhi and Mutrakshaya**

Mutravridhi (Increased Quantity of Urine)

The symptoms of an increased quantity of urine include bladder distension and pain, frequent urges to pass urine, and the sensation that one has not passed urine, even after passing urine.⁴¹

Mutrakshaya (Decreased Quantity of Urine)

A decreased quantity of urine is characterized by scanty urine, dysuria, bladder pain, abnormal color or blood stained urine, thirst, and mouth dryness.⁴²

Some systemic diseases also have some symptoms related to the *Mutravaha Srotas*. *Vata*, according to *Sushruta*, is responsible for controlling regular urination, and when it becomes vitiated, it results in several ailments connected to *Basti*. According to *Sushruta*, the vitiated *Doshas* at the stage of *Sthansamsraya* manifest as *Prameha*, *Ashmari*, *Mutraghata*, and many other diseases when they reach *Basti*.⁴³

Vivarnyta (discoloration) of *Mutra* is present in *Raktipitta*, *Pandu*, and *Kamala* etc. The *Bahu Mutrata* symptom is seen in *Aamaja Jwara* and *Aamvata*.

The manifestation of *Mutravaha Srotas* (Urinary System) vitiation includes

1. **Atisristama Mutrayantam** (Excessive excretion of Urine):-Excessive excretion of Urine can be called as *Mutra-Atipravrittijanya roga* includes twenty types of *Prameha*. In *Prameha*, *Mutravaha Srotas* are involved.⁴⁴ Suppression of the natural urges is also mentioned as the cause of *Prameha*.⁴⁵ The aggravated *Vata* spreads throughout the body. Due to the large quantity of *lasika* (lymphs) in the body and also due to the property of *Vata* to dissipate things, *lasika* entering the urinary bladder produces large quantity of urine, causing excessive micturition.

2. **Atibaddham Mutrayantam** (Excessive obstruction or suppression of urine)- Eight types of *Mutrakrichchhra* (Dysuria) and thirteen types *Mutraghata* (Obstructive Uropathy), *Mutraja Udavarta* (neurological dysfunction of urinary tract) are mainly included in the *Mutra Apravrittijanya Roga*. *Apana* and *Samana Vayu*, or the autonomic nervous systems is irritated by the suppression of urination. The vitiated *Apana* and *Samana Vayu* disrupt

the coordination between bladder contraction and sphincter relaxation as well as the peristalsis of the colon and rectum, as well as the passage of urine from the pelvis to the ureter. It can lead to retention or suppression of urine. This may cause *Mutraghata* or *Mutraja Udavarata*. Due to suppression of urine there may be fullness of bladder, a full bladder can provide a habitat for germs to live in and grow. The sterile urine could start to harbor bacteria if it's left in the bladder for too long. In turn, this will result in the infection growing and spreading. This may lead to *Mutrakrichhra* (UTI).⁴⁶

3. Prakupitam- Alpalpam- Abhikshanam (vitiated, diminished or frequent urination). This means *Alpa-alpa Mutra Pravritti* i.e. dribbling of the urine. In *Vata –basti*, *Bastikundala* the types of *Mutraghata*, *Alpa-apla Mutra* is also a symptom told by *Acharya Sushruta* in the *Mutraja Udavarta*.⁴⁷ *Acharya Charaka* has told that, in *Shanirameha*, the patient passes small quantity of urine with difficulty and very slowly.⁴⁸

4. Bahalam-Sashula Mutrayantam (thick urine with pain)

The thick or viscous urine is called *Bahala Mutra*. When stored overnight in *Sandrameha*, the person's urine becomes more viscous. When kept overnight in *Sandraprasadameha*, the patient's urine becomes partially viscous and partially clear.⁴⁹

Urinary tract diseases have *Sashula Mutra* (Dysuria):- *Vatakundalika* (scanty and painful flow of urine), *Mutra-jathara* (accumulation of urine in abdominal cavity), *Mutra-granthi* (cyst at the neck of bladder), *Mutrotsanga* (residual urination), *Mutrasteeta*, (delayed micturition) *Mutrakshaya* (oliguria), *Mutroukasada* (dense urine), *Vidvighata* (feces coming through urine), *Mutrashukra* (Retrograde flow of semen) and in *Mutrakrichchhra* i.e. discomforts during micturition.⁵⁰

Due to *Mutravegadharana*, there is accumulation of urine in the urinary bladder more than a normal time. Various studies have shown that a full, distended bladder impacts the normal function of the whole urinary system. Different researchers have presented data to support this hypothesis.

1. A full, distended bladder causes a reduction in urine production. Hvarness H studied the effect of a full bladder in 12 healthy females on urine production. She concluded that the urine production in the full-bladder test was significantly lower than in the empty-bladder test (P = 0.024). A significant increase in mean blood pressure was found (P= 0.01) in the full bladder.⁵¹

2. Harbert JC studied the effect of urinary filling with the

radioactive isotope renogram pattern. The study shows that there is delayed accumulation of the tracer in the renal pelvis and delayed pelvis emptying on filling their bladders naturally by refraining from voiding. This means suppression of urine urge cause partial retention of urine.⁵²

3. Fulop M conducted an animal experiment have shown that increased intratubular pressure markedly depressed glomerular filtration.⁵³

4. Nogrady has done an experimental study to evaluate effect of (voluntary) bladder distention on the intravenous pyelogram. This study concluded that voluntary retention of urine in healthy occasionally produces ureteral dilatation and in some cases simulates hydronephrosis^{54, 55}

5. W. B. GILL studied the effect of influence of bladder fullness on upper urinary tract dimension and renal excretory function on the patients of recurrent urinary tract infections or microscopic hematuria. On planimetry the urographic areas of the pelvicaliceal systems decreased by forty three percent on the right side and thirty eight per cent on the left side when the nearly full bladder was compared to the nearly empty bladder in ten patients. Renal excretory function also was affected by nearly full bladders. Urea clearances after 1 hour were twenty four percent lower and creatinine clearances were nine percent lower when starting with a nearly full bladder as compared to starting with an empty bladder.⁵⁶

6. Shukla M, studied 25 normal healthy human volunteers of 20-45 years who suppressed their urine urge. The effect of retention of urine on biogenic amines and certain physiological parameters has been examined. Plasma and urine catecholamines and 5-HT significantly increased after retention. Simultaneously rise in Blood Pressure, Respiratory Rate, Pulse Rate were also observed. Retention of urine may induce stress as this increasing the catecholamines level.⁵⁷

DISCUSSION

The body produces *Vega* to maintain internal equilibrium; therefore, if *Vega* are impeded, internal equilibrium is disturbed, resulting in a variety of diseases. In Ayurveda vitiated *Samana* and *Apana* are responsible for the disease of urinary tract. As *Mutra* is formed by the action of *Kledaka Kapha*, *Samana Vayu* on the *Ahara* and is excreted from the body with the help of *Apana Vayu*. Holding the urine urge cause the *pratilomagati* of the *Apana Vayu* which lead to the staying of the urine for the long time in the urinary bladder. This causes various

diseases of the urinary system. Sometimes this leads to the *Mutraghata* (Retention of urine) and if any microorganism grows there then it can also lead to infection of the Urinary Tract System. *Mutravegadharana* affects the normal physiology and anatomy of the urinary system.

A long time, holding the urine causes bladder muscle distension, which impairs bladder sensation and increases bladder capacity. Long-term retention of urine impairs neuromuscular transmission after mechanical over distension, and as muscle fibers get increasingly more stretched, they gradually lose their ability to contract. This can cause retention of urine.

Voluntary retention of urine in healthy occasionally produces ureteral dilatation. Sometimes it can also cause the vesico uretero renal reflux. Probably too much intravesical pressure is responsible for the back pressure. This intravesical pressure also reduces the urine formation. This can be a defense mechanism for the body to reduce the pressure. But if urine remains in the body for a long time, harmful toxins will also remain in the body. *Mutravegadharana* has an effect on physical and mental wellbeing. Voluntarily holding urine in humans causes an increase in catecholamine. This can lead to the increase in the blood pressure. Also this shows an effect on the psychological level. Retention of urine may induce stress as this increases the catecholamine level. Chronic suppression of urine desire, which develops through everyday practice, can lead to kidney function impairment.

CONCLUSION

Acharaya Charaka first explained the *Mutravega* among all the *Vegas* because of its higher frequency and since it is the most prevalent natural urge that a person suppresses. *Mutravegadharana* mainly causes the *Sanga* types of *Strotodushti* in the *Mutravaha Stortas*.

Before making a diagnosis, a physician must inquire about the suppression of *Adharaneeya*. *Mutra Vegadharana* has a significant role in the manifestation of urinary diseases. It can also worsen the symptoms of disease or can cause some complications. It can cause a reduction in urine production, delayed excretion of urine or sometime may cause retention of urine. Other than urinary tract disease, retention of urine can also be capable of producing psychosomatic diseases. It also influences the physiological as well as biochemical parameter.

Acknowledgements - Nil

Conflict of interest - None

Source of finance & support – ITRA, Jamnagar

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How to cite this article: Jyoti P, Baghel A. S., Kamble S, Chinthala R.K, Shruti "Role Of *Mutravegadharana* (Suppression Of Urine Urge) In The Causation Of *Mutravahasroto Dushtijanya Vikaras* (Urinary Tract Diseases) – An Appraisal" IRJAY.[online]2022;5(11); 117-124.Available from: <https://irjay.com>
DOI link- <https://doi.org/10.47223/IRJAY.2022.51115>