



Research Article

A COMPARATIVE CLINICAL STUDY OF TRUNAPANCHAMULA KWATHA AND HARITAKYADI KWATHA IN THE MANAGEMENT OF PITTAJA MUTRAKRICCHRA

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ABSTRACT

The quest of man to live happily lies in being healthy. The task of medicine is to preserve and to restore the health by relieving the suffering. The pain is universally understood as a sign of disease. It is a most common symptom that brings a patient to physician's attention.

Pittaja Mutrakricchra is a common disorder affecting all age groups and both sexes. It is not limited to particular class of the society. It is *Shoola (Ruja) Yukta daha pradhana pakwasaya samuttha Samanyaja Vyadhi* affecting urinary system and leaving the person disable and disappointed from the daily routine activity. Various *Acharyas* mentioned the *Shodhana* and *Shaman chikitsa* for it. The *Trunapanchamula kwatha* and *Haritakyadi kwatha* are mentioned as *Mutrakricchrahara* in *Bahisajya Ratnavali*, *Chakradatta* and *Yogaratanakara*. Also these *Kwatha* does *Pittahara*, *Vatanuloman* and *Basti shodaka*. Hence both the combination is worth tested for their efficacy in *Pittaja Mutrakricchra*.

For present study 40 patients diagnosed as *Pittaja Mutrakricchra* were randomly selected from Dr. B.N.M.E. Trust's Shri Mallikarjuna Swamiji Post Graduate and Research Center, Bijapur. Patients thus selected were randomly allocated in 2 groups Group A and Group B. Group-A & Group-B patients received *Trunapanchamula kwatha* & *Haritakyadi kwatha* 48 ml with *Sukoshna jala* as *Anupana* before lunch and dinner for 30 days respectively.

The overall effect of therapies showed both *Trunapanchamula kwatha* and *Haritakyadi kwatha* having better result in management of *Pittaja Mutrakricchra*.

INTRODUCTION

Maharishi Sushruta explains the importance to learn other fields of science in *Sutra sthana*. *Vagbhata* has also stressed that science should always adapt to the changes of the generation. *Mutrakricchra* is a disease of Urinary tract in when the person experiences difficulty in micturition.

Urinary Tract infection is undoubtedly one of the common medical as well as surgical, gynecological and obstetrical problems in all under developed, developing and developed countries of world. Burning during micturition along with pain is universally understood as a sign of Urinary disorder.

Pittaj Mutrakricchra is *shoola (ruja) yukta daha pradhana pakwashaya sammutha samanya vyadhi* affecting Urinary system and leaving person disables and disapproved from routine activity. *Pittaja Mutrakricchra* and UTI (lower Tract) can be correlated

as they have similar clinical features. It has been surveyed by WHO the U.T.I. is the second largest infection in whole world after R.T.I.

AIM

To study 'A comparative clinical study of the efficacy of *Trunapanchamula Kwatha* and *Haritakyadi Kwatha* in the management of *Pittaja Mutrakricchra*'.

OBJECTIVES

1. To study the *Nidana Panchaka* of *Pittaja Mutrakricchra*.
2. To assess the therapeutic efficacy of *Trunapanchamula Kwatha* and *Haritakyadi Kwatha* in *Pittaja Mutrakricchra*.
3. To compare therapeutic efficacy of *Trunapanchamula Kwatha* and *Haritakyadi Kwatha* in *Pittaja Mutrakricchra*.

MATERIALS AND METHODS

AUOSHADHO YOGA: *Trunapanchmool kwatha & Haritakyadi kwath.*

STUDY DESIGN

It was a comparative clinical study on the incidentally selected patients, which were allocated in Group A and B respectively.

SOURCE OF DATA

The patients of *Pittaja Mutrakricchra* from the OPD of Dr. B.N.M.E. Trust's Shri. Mallikarjun Swamiji Post Graduate and Research Center, Bijapur, and patients from camps conducted by Dr. B.N.M.E. Trust's Shri. Mallikarjun Swamiji Post Graduate and Research Center Bijapur, and at Manguli approximately satisfying the selection criteria were selected.

INCLUSIVE CRITERIA

1. The diagnosed patient of *Pittaja Mutrakricchra* according to classical signs and symptoms.
2. Patients of either sex.
3. The patients were selected between the age group of 16 – 50 years.

EXCLUSIVE CRITERIA

1. The patient having surgical problem of UTI and its complication.
2. The patient age group less than 16 years and more than 50 years.
3. Patient suffering from any other systemic disorders like Cancer, Koch's, HIV, VDRL, BPH, Diabetes and STD.

DIAGNOSTIC CRITERIA

The parameters for diagnosis are completely based on classical signs and symptoms like *Peetam, Saraktam, Sarujam, sadham, Muhur muhur kricchra mutra pravrutti* with or without other symptoms. Mainly urine test was considered for fulfilling the diagnostic criteria.

GROUP A

Sample size: 20 patients

Drug: *Trunapanchamula kwath*

Dose: 48 ml twice a day (one *Pala* twice a day).

Anupan: *Sukoshna jala*

Duration: 30 days.

GROUP B

Sample size: 20 patients

Drug: *Haritakyadi kwath*

Dose: 48 ml twice a day (one *Pala* twice a day).

Prakshepak dravya: *Madhu* 1 tsf each time.

Anupan: *Sukoshna jala*

Duration: 30 days.

FOLLOW UP

The total duration of treatment is 30 days.

During treatment follow up: 15th day

After treatment follow up : 30th day

Post treatment follow up : after 30 day (60th day).

INVESTIGATION

Following investigation was carried out before treatment and after treatment at the end of follow up to assess the general status improvement.

Urine routine (examination) investigation.

ASSESSMENT OF VARIABLES

The severity of each variable ranging from

- 1). Normal 2). Mild 3). Moderate 4). Severe

GRADING FOR SUBJECTIVE VARIABLES

1) *Peeta Mutrata* (Yellow color urine)

Pale yellow color (Normal urine color)	: Grade 1
Mild yellow color	: Grade 2
Yellow color	: Grade 3
Deep Yellow color	: Grade 4

2) Burning Micturation

No burning	: Grade 1
Mild rare burning in morning or at starting of micturation	: Grade 2
Moderate, Tolerable burning at starting and during micturation	: Grade 3
Severe, not tolerable at starting, during micturation and prolonged For long time	: Grade 4

3) Pain

No pain	: Grade 1
Mild rare pain in morning or at starting of micturation	: Grade 2
Moderate, Tolerable pain at starting and during micturation	: Grade 3
Severe, not tolerable at starting, during micturation and prolonged For long time	: Grade 4

4) Frequent Micturation

No frequent micturation (normal 6 – 8 times)	: Grade 1
Rarely frequent controllable (9 - 10 times)	: Grade 2
Often frequent not able to control (11 – 12 times)	: Grade 3
Persistent many times more than 12 times	: Grade 4

5) Urine mixed with Blood or graded according to number of RBC's in Urine

No urine mixed with Blood (0 – 4)	: Grade 1
Urine stick test positive (Rare urine mixed with blood) (5 – 20)	: Grade 2
Macroscopically invisible but present in microscopy (21 – 40)	: Grade 3
Severe, visible to bare eyes Frank blood mixed micturation (above 40)	: Grade 4

GRADING FOR THE OBJECTIVE VARIABLES

1) Albumin

1) No albumin	: Grade 1
2) Trace	: Grade 2
3) Present (+)	: Grade 3
4) Present (+ +)	: Grade 4

2) Pus cells

1) 0 – 4	: Grade 1
2) 5 – 20	: Grade 2
3) 21 – 40	: Grade 3
4) Above 40	: Grade 4

3) Epithelial cells

1) 0 – 2	: Grade 1
2) 3 – 20	: Grade 2
3) 21 – 40	: Grade 3
4) Above 40	: Grade 4

DISCUSSION

The *Nidana*, *Samprapti* of *Pittaja Mutrakricchra* are not found separately in classics but being one of eight types of *Mutrakricchra*, the same *Nidanas* may applicable to *Pittaja Mutrakricchra*, among them, *Ruksha Madhya Prasanga*, *Anupamamsa sevan*, *Adhyasan*, *Ativyayam* etc are striking causes.

The point validated as we find *Mutrakricchra* occurs as a clinical symptom in *Pakwasayasta vata* and other diseases.

In modern science micro organisms are considered to be sole cause of UTI. Though Ayurvedic classical text contains references of *Krimi* (which is accepted term for worms and micro organisms) causation of *Mutrakricchra* by them has not been mentioned.

The modern theories of pathogenesis suggest that bacterial gain access to bladder via urethra. From an Ayurvedic point of view even in *Agantuja karanas Dosha prakopa* is the main cause for the *Vyadhi* though pain occurs first. *Khavaigunya* in *Srotas* decides whether there will be *Sthana samsraya* of *Doshas* or not.

The drugs in both the *Kwath dravyas* are *Mutravirechaniya* and *Pittavatashamak* and *Basti*

shodaka. So the drugs do both karma i.e. *Shodhana* and *Shaman* by their properties.

DISCUSSION ON NIDANA PANCHAKA

DISCUSSION ON NIDANA

Samanya nidana

The *Nidana* which affects the *Mutravaha srotas* can also be considered as *Samanya nidana* of *Pittaj Mutrakricchra*.

- 1) *Mutritodak-bhaksya-strisevan*
- 2) *Mutra vega nigrahana*
- 3) *Ksniya*
- 4) *Abhiksata*

Visistha nidan (specific etiological factor)

a) Pitta Prakopaka nidana

1. **Tikshna aushada sevan:** *Tikshna aushadha sevan* directly leads to *Pitta prakopa* as both have same *Guna*. So in this the *Pitta* which is influence of *Vata* may accumulate in *Basti* and causes *Mutrakricchra*.
2. **Madhya prasanga:** Excessive *Madhyapan* causes *Vata* and *Pitta prakopa* i.e. *Ruksha gunatmak vridhhi* of *Vata* and *Teekshna gunatmak vruddhi* of *Pitta* occurs. This *Prakupita vata* and *Pitta* causes *Mutrakricchra*. The patients observed in this category were showing *Ojakshaya lakshanas*.
3. **Anupmatsya sevan:** The intake of unhealthy *Mamsa* causes to *Tridosha prakopa* increase *Kllenata* and *Kleda* and causes *Mutrakricchra* results to *Mutrakricchra*.
4. **Adhyasana:** The *Adhyasana* lead to *Agnimandhya* which is cause for 'Ama'. *Agni* is transforming factor of *Ahara* into *Sara* and *Kitta* portion *Mutra* is formed from *Kitta* portion. So *Agnimandhya* results to *Adhyasana* will alter the status of formation of *Mutra* leading to its *Dusti*.
5. **Ajirna:** In *Ajirna saman vayu*, *Pachak pitta* and *Kledaka kapha* are affected. Since *Ahara rasa* i.e. formed initially is not of good quality. The ultimate products of digestion i.e. *Sara* and *Kitta bhaga* will also be an inferior quality. So normal functions of *Mutra* i.e. removal of *Kleda* is not achieved and *Kleda* accumulates in body. So many patients give history of *Adhyasana* and *Ajirna* during the clinical trial.

b) The Vata prakopa nidanas

They are *Ativyayam* and *Nityadrut prsthanat*. These are also striking causes observed during clinical trial in *Pittaja mutrakricchra*.

Ativyayam: Excessive exercise leads to vitiation of *Vata*. *Ativyayam* causes increase in *Sweda pravrutti* which causes *Alpa mutrata*.



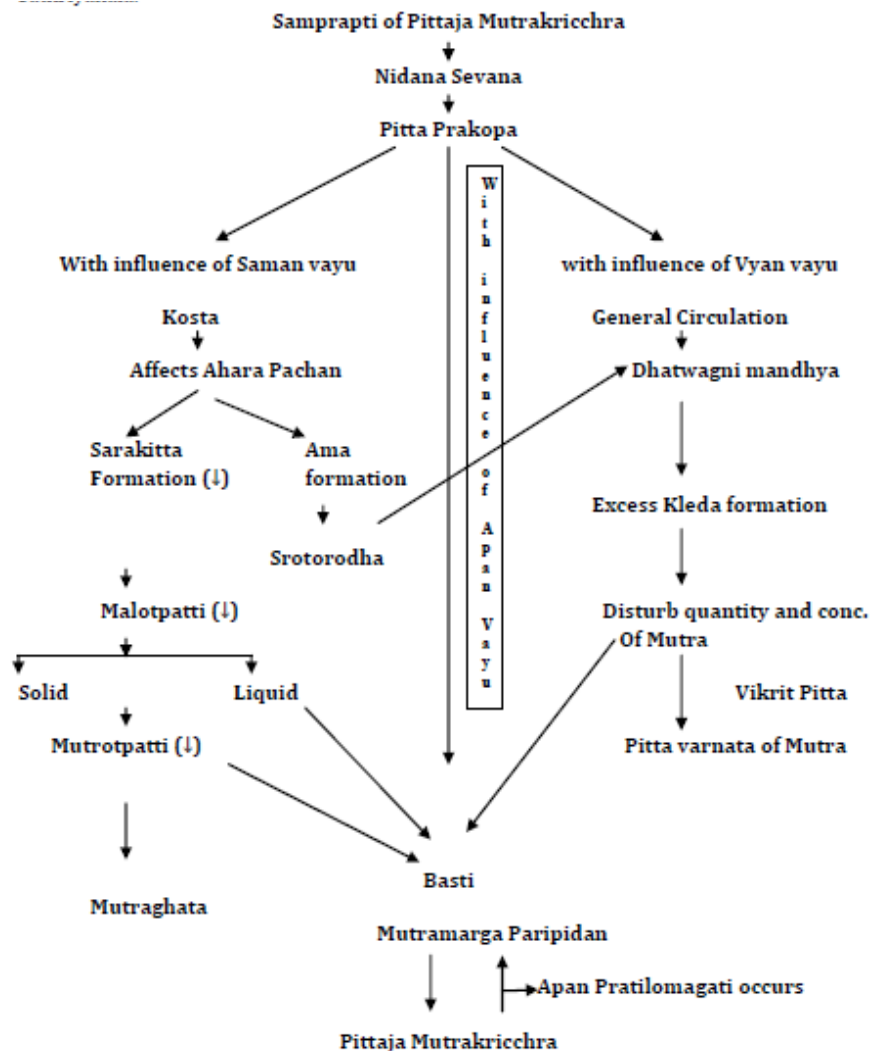
DISCUSSION ON SAMPRAPTI

Tridosha prakopa by their own causes they enter Basti and produce *Srotorodha*, *Sankocha* and *Kshobha* at *Mutramarg* which further causes, *Basti Pradesh Shotha* and produce pain and difficulty while passing urine and resultant disease as a *Mutrakricchra*. Also the *Apan vayu dusti* causes *Sanga* in *Mutravaha srotas* which also produce pain and *Kricchrata* at time of urination leads to *Mutrakricchra*.

Samprapti Ghatakas

<i>Dosa</i>	: <i>Pitta Vata (Pachak pitta and Samana, Vyana, Apana vayu)</i>
<i>Dusya</i>	: <i>Rasa, Rakta, Mutra, Kleda, Sweda</i>
<i>Srotas</i>	: <i>Mutravaha srotas</i>
<i>Sroto dusti prakar</i>	: <i>Sanga</i>
<i>Agni</i>	: <i>Jataragni</i>
<i>Mahabhut</i>	: <i>Jala and Agni</i>
<i>Udhbhava Sthana</i>	: <i>Kostha (Pakwashaya)</i>
<i>Adhistan</i>	: <i>Basti</i>
<i>Roga marga</i>	: <i>Madhyama Roga marga</i>

Chart 1: The probable stages of manifestation of Pittaja mutrakricchra according to Satkriyakala



DISCUSSION ON PURVA RUPA

There are no textual references for *Purvarupa*. But *Chakrapani* comment of Ca.Sa.Ci.11/12 says that *Laksanas* of the *Vyadhi* which are expressed in milder or incomplete form are to be considered as *Puravrupa* of *Pittaja Mutrakricchra*.

DISCUSSION ON RUPA

Daha: It is purely *Paitika lakshana*. Due to increase in *Ushna*, *Tikshna*, *Ruksha guna* of *Pitta* patients feels burning sensation at the time of urination.

Ruja: Pain at time of urination is due to *Vata*. In present study patients giving history feeling pain at genital region, lower abdomen, pelvic region and sometimes due to infections pain can spreads up to kidneys and both lumbar regions.

Peeta mutrata: It is due to the vitiated *Pitta* which causes *Vivarnata* of *Peeta*.

Muhur muhur mutra pravrutti: Is due to vitiation of *Apan vayu*, which becomes *Pratiloma* in *Mutrakricchra* and causes on and off micturition.

Sarakta mutrata: Is due to vitiation of *Rakta* by *Vidagdha Pitta*.

While clinical trial it was noticed in many of patients having burning Micturition, pain, change of color of urine, hesitancy and urgency were also noticed in some patients. The *Sarakta mutrapravrutti* was also observed microscopically in some patients. Also on and off micturition is noticed in number of patients. These signs and symptoms of *Pittaja Mutrakricchra* are observed in patients in various grades. *Kala, Rogi bala, Rog bala, Desha* also plays an important role.

DISCUSSION ON SADHYASADHYATA

As it is a *Marmagata vyadhi* it is *Kastasadhya*.

DISCUSSION ON CHIKITSA

- 1) *Shodhan* therapy *Virechan* and *Basti*.
- 2) *Shaman* therapy in the form of internal medicine like *Choornas, Ksheerpaka, Kwath, Ghrita, Taila, Vati, Guggulu* etc and external application of *Pradeha* with *Seeta dravya, Parisheka* and *Avagaha* etc. As so many forms of internal medicine are available, the *Kwath* preparations are taken for *Shaman* therapy due to their easier and faster way of absorption

from gut and reach fast at site of action. Hence the present study was carried with *Trunapanchamula Kwatha* and *Haritakyadi Kwatha* preparation for the need of the hour.

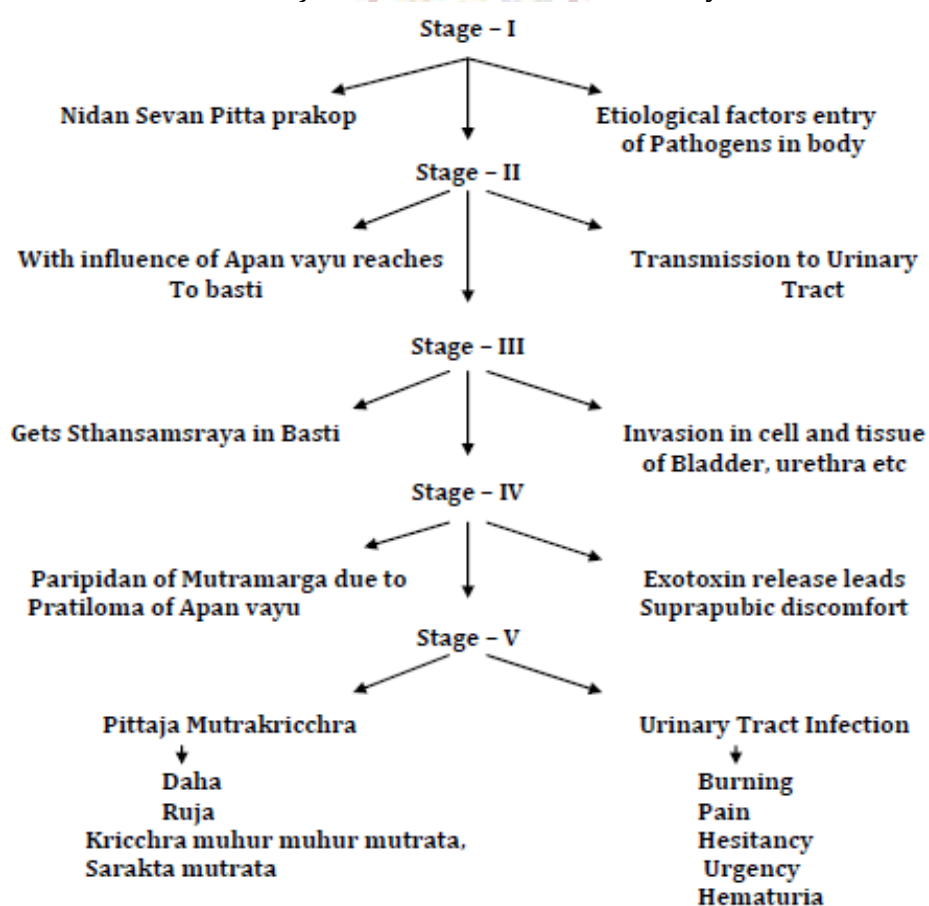
Criteria for selection of trial drugs

- Easily available drugs.
- Acts as a *Mutrakricchrahara*.
- Does not contain any known side effects.
- Economical.

1) **Trunapanchamula kwath:** The main reason to select this *Kwath churna* was that all the drugs *Kusha, Kasha, Shara, Darbha* and *Ikshu* have been said to have *Mutrakricchrahara* properties and *Pitta vatahara* and *Basti shodhak*. Due to these activities the aggregate properties of *Kwath* are useful in *Samprapti Vighatana* of *Pittaja Mutrakricchra*.

2) **Haritakyadi Kwath:** The *Haritakyadi kwath* has been selected because, the drugs *Haritak* and *Pashanbhed* are *Mutranulomaka* and *Ashmarighna* and *Gokshura, Aragvada* and *Dhanwya* are *Mutra Virechaniya*. All these drugs act as *Tridosha shamak* except *Pashanbhed* which is *Kapha Pittahara*. All these properties play role in *Samprapti Vighatana* of *Pittaja Mutrakricchra*.

Chart 2: Pittaja Mutrakricchra Vis-à-vis Urinary tract infection



MODE OF ACTION OF KWATHA

Kwatha is prepared by using the coarse powder form of drug with water by using the theory of decoction. In this water soluble and thermostatic active principles of the drugs are extracted out. Hence water is used as the base for the formulation. Water absorbed in the body faster than any other solvent. As the therapeutics active principles of the drugs are absorb in the water in *Kwatha* form and hence when it is administered to the patient its action is very fast. Faster is the absorption of the drugs faster the drug action. Radial absorption of the *Kwatha* in GIT facilitates the drug to reach its site of action. The drug theory suggests that every drug has the affinity towards their host organ to exhibit its action. The both *Kwatha* taken for clinical study are mainly formulated for *Mutravaha srotas* and aimed for *Mutravirechana* and *Pittavatashamana*, the base used as water increases the urine output and cleans up the channels. Thus the mode of action of *Kwatha* makes easier for the therapeutic management of the undertaken clinical trial on the *Pittaja Mutrakricchra*.

PROBABLE MODE OF ACTION OF TRUNAPANCHAMULA KWATHA

It contains the drugs *Kusha, Kasa, Sara, Darbha* and *Ikshu*. All the drugs are having *Madhur* and *Kashaya rasa* except *Ikshu* which having only *Madhur rasa*, all are having *Seeta veerya, Madhur vipaka, Laghu* and *Snigdha guna* and all are having *Prabhav Mutrakricchrahara*.

Considering above properties all the drugs having *Madhur rasa, Madhur vipak, Seeta veerya* and *Laghu snigdha guna*, and having the *Prabhav Mutrakricchrahara* given in the form of *Kwath* gets absorbs easily and does *Pitta* and *Vata shamana* and acts as *Mutral* or Diuretic. Also does *Mutravirechan* and *Bastishodhan* by their properties, so these preparations have shown effective result in patient of *Pittaja Mutrakricchra* by breaking the pathogenesis of disease. Hence based on these properties of drugs and their specific drug action *Mutrakricchrahara* acts on urinary system, it has been selected for present study and previous works also reveals the same.

PROBABLE MODE OF ACTION OF HARITAKYADI KWATHA

It contains the drugs *Haritaki, Gokshura, Pashanbheda, Aragvada, Dhanwiyas* and *Madhu* as a *Prakshepak dravya*. Although drugs in *Haritakyadi kwatha* are of different properties i.e. *Rasa, Veerya, Vipaka* and *Gunas*, we found the common qualities – as the four *Dravyas* of them except *Haritaki* having *Sheeta veerya* and except *Pashanbheda* all having *Madhur vipaka* and *Madhur rasa* as a *Pradhan rasa* or *Anurasa*.

Haritaki due to its *Madhur* and *Tikta rasa* acts as *Pittaghna* and due to *Madhur rasa* and *Ushna veerya* it does *Vata shamana* and *Prabhava* is *Tridosahara, Vedanasthapaka, Shothahara* etc. It is having *Anuloma*

property. By these properties vitiated *Dosha* and *Malas* are excreted out of body. *Aragwadha* due to its *Madhur rasa* and *Seeta veerya* increase urine output acts *Mutral* and *Pittashamak*. *Dhanwayas* with *Snigdha* and *Laghu guna* acts *Mutral* and *Pittashamak*. *Gokshur* with *Madhur rasa* and *Snigdha guna* increases *kapha* and ultimately *Kleda* increases “*Mutrasya Kledavahanama*”, therefore due to increased *Kleda* the *Mutra* is increased. *Pashanbheda* due to its *Laghu* and *Teekshna guna* is helpful for action of *Ashmaribhedan* and *Kapha pittashaman*. Thus *Haritkyadi kwath* works in *Pittaja Mutrakricchra*. Overall, the drugs are *Tridosha hara* and *Mutral*.

With this *Kwath madhu* is added as a *Prakshepaka dravya* which is *Sookshma* and *Srotovishodaka* it removes *Stanika sanga* and does *Lekhana* and hence pacifies the vitiated *Doshas*. As *Madhu* is *Yogavahi* it increases the properties of *Kwatha* and carries it to *Sookshma srotas* and does *Srotoshodhana*. So these preparations have shown effective result in patient of *Pittaja Mutrakricchra* by breaking pathogenesis. Hence based on these properties of the drugs and their specific drug actions that it is *Mutrakricchrahara* and acts on urinary system it has been selected for the present study previous works also reveals the same.

OBSERVATION

Age: In present study age limit for selection criteria was between 16-50 years. Among them maximum number of patients were belongs to age groups 26 – 35 years (21 patients, 52.5%). The UTI is most common in reproductive age group. The 26 – 35 age period is a peak period of reproductive life. The large number of patients may be required to reveal the actual statistics.

Sex: Unequal incidence was observed in sex ratio. Maximum number of patients in present study were males (27 patients, 67.5%) followed by females (13 patients, 32.5%). Higher incidence in male because in many cases the history of *Vegadharana*, habits of tobacco chewing, smoking, habit of alcohol was common. Also *Malabhadhata* was observed. The female patients were less in this study, still as it is known that female patients are more prone to lower UTI, because of many unhygienic conditions. But in present study as the sample is not large so it does not give any clear picture.

Agni: It is evident from present study that most of patients suffer from the abnormality of *Agni*. No patients were observed with *Samagni*. *Mandagni* (27 patients, 67.5%), *Vishamagni* (12 patients, 30%) and *Teekshnagni* (1 patient, 2.5%) were observed. So it can be said that *Agni* plays an important role in producing *Roga*.

Marital status: Majority of patients registered for the present study were married (21 patients, 52.5%) and unmarried were (18 patients, 45%) widow (1 patient, 2.5%). The age limit for present study for selection

criteria was between 16 to 50 years. There is increased risk of spread of infection through cohabitation and marriage is also solemnized at a young age in Indian social setup and this could be reason for higher proportion of married patients.

RESULTS

Burning Micturition (*Sadaha Mutra Pravrutti*)

Both groups had shown highly significant result in reduction of Burning Micturition at the end of treatment and at the end of follow up.

Comparing 't' values of both Groups, Group A patients showed better result than Group B. The drugs in both Groups have *Madhura* and *Tikta rasa*, *Madhur vipaka* and the *Seeta veerya* which are *Pitta hara*. So the improvement can be understood based on *Rasa*, *Veerya* and *Vipaka* of both Groups.

Pain (*Saruja Mutra Pravrutti*)

Group A: Patients showed highly significant result in reduction of pain at the end of treatment and at the end of follow up.

Group B: Patients shown highly significant result at the end of treatment and significant result at the end of follow up.

The pain is due to *Vata*. The ingredients of *Trunapanchamula kwatha* control the *Vata* and *Pitta* by their properties as *Vatashamana* and *Pittahara*. Thus seen results are highly significant at the end of treatment and at the end of follow up in Group A.

Also the drug in *Haritakyadi kwatha* by their properties acts *Pittahara* and *Vatashamana* and *Haritaki* is *vedanashamaka* shown highly significant result at the end of treatment. The significance result at the end of follow up in Group B is may be due to not following *Pathya apanya* and indulge in *Nidan sevan* again like riding etc.

Frequent Micturition (*Muhur muhur kricchra mutra pravritti*)

Both groups showed highly significant result in reduction of Frequent Micturition at the end of treatment and at the end of follow up. Comparing 't' values of both Groups, Group A patients showed better result than Group B. *Apana vayu* is responsible for *Mutra niskasana*. Hesitancy and urgency are due to the derangement of *Apana vayu*. All the five *Dravyas* of *Trunapanchamula Kwath* have *Madhur rasa* and *Madhur vipak* causes easily evacuation of urine and stool. This means that they have effect on *Apana vayu*. The ingredients of *Haritakyadi kwatha* are having properties of *Vatanulomak* i.e it relieves *Vata* hence facilitates easy excretion of *Mutra*. Hence highly significant result was observed in both the groups.

Urine mixed with blood

Group A: Patients shown significant result in reduction of urine mixed with blood at the end of the treatment and at the end of follow up. As all the drugs of

Trunapanchamula Kwath are having *Seeta veerya* which acts as a *Stamban* i.e. Haemostatic therefore useful for arresting internal and external bleeding. Hence it is useful in Haematuria.

Group B: Patients shown no significant result in reduction of urine mixed with blood at the end of the treatment but shown highly significant result in reduction of urine mixed with blood at the end of follow up. As the *Dravyas* of *Haritakyadi Kwath* have *Seeta veerya* it acts as Haemostatic and acts in arresting internal and external bleeding. So this can be concluded that follow up period have good result in case of *Haritakyadi Kwath* or may needs some more period of time duration.

Peeta Mutra (yellow color urine)

Both groups had shown highly significant result in reduction of *Peeta mutra* at the end of treatment and at the end of follow up.

But while comparing the 't' value of both Groups after treatment and after follow up, the result is seen as highly significant after treatment than after follow up.

As the both *Kwath* having drugs which are *Pitta shamaka* and *Pitta hara* due to their *Madhur rasa* and *Madhur vipaka* and *Seeta veerya* they does *Pitta shamana* and *Pitta hara* by *Mutravirechana* property. So the patients of both Groups showed highly significant result.

Albumin

Both groups had shown highly significant result in reduction of Albumin at the end of treatment and at the end of follow up.

Comparing 't' values of both Groups, Group A patients showed better result than Group B. The excess of Albumin released from muscles during the excessive work and excess exercise. The result of both *Trunapanchamula* and *Haritakyadi Kwatha* in Group A and Group B with proper *Pathya palan* may shown the highly significant result.

Epithelial cells

Both groups had shown highly significant result in reduction of epithelial cells at the end of treatment and at the end of follow up.

Comparing 't' values of both Groups, Group A patients showed better result than Group B. This may be the diuretic properties of drugs of both *Kwath*.

Pus cells

Group A: Patients shown highly significance result in reducing Pus cells at the end of treatment and at the end of follow up.

Group B: Patients shown significant result in reducing pus cells at the end of treatment and at the end of the follow up.

This may be the drugs of *Trunapanchamula Kwath* having better antimicrobial activity than the drugs of *Haritakyadi Kwath*.

Overall both *Kwatha* drugs have shown definite antimicrobial activity. So complications of urinary tract are ruled out. So both *Kwath* acts as antibacterial, anti inflammatory and diuretic.

Overall effect of the therapy

The overall affect of the therapies showed both the *Trunapanchamula Kwath* and *Haritakyadi Kwath* having better result in management of *Pittaja Mutrakricchra*.

The result of study showed that almost all the results are better at the end of follow up in both Groups. So in present study follow up of patients show the importance of follow up period.

Even though highly significant results are observed in both Groups, but variation in 't' values, shows Group A is more effective than Group B which is justified by statistical analysis.

On the basis of literature observations and results with statistical data the discussion and conclusion were done.

CONCLUSION

1. *Pittaja Mutrakricchra* is *Pakwashaya samutha shoola yukta daha pradhan madhyama rogamargaja samanyaja vyadhi*.

2. *Ativyayam, Teekshna Aushadha, Atimadhayapan, Adhyashana* and *Ajirna* are main striking causes of *Pittaja Mutrakricchra*.
3. For *Pittaja Mutrakricchra vishesha nidana* are elicited from *Mutrakricchra vyadhi nidhana*, and on basis of *Kriyakala vishesh samprapti* can be drawn.
4. *Pittaja Mutrakricchra* can be compared to lower urinary tract infection.
5. The role of *Krimi* as a causative factor of *Pittaja Mutrakricchra* was not mentioned in classics.
6. In overall study the patients observed with *Peeta mutrata, Saruja, Sadaha, Kricchra muhur muhur mutra pravrutti* and few of *Sarakt mutrapravrutti*.
7. The *Trunapanchamula kwatha* and *Haritakyadi kwatha* contain *Pittavatashamaka* and *Mutravirechaniya* drugs, so they act as *Shodhana* and *Shamana* simultaneously.
8. Both *Kwath* are having highly significant results in *lakshanas* like *Peeta mutrata, Sadaha, Saruja, Muhur muhur mutra pravrutti* but compared to *Haritkyadhi Kwath* the *Trunapanchamula Kwath* gave better results in *Pittaja Mutrakricchra*.
9. Both the *Kwath* are simple formulations, economical for patients and does not shown any adverse effects.

Table1: The Response of Individual Group after Treatment

Variable	Group	CD	CS	CI-I	CI-II	CI-III
Yellow color	A	00%	00%	60%	40%	00%
	B	00%	00%	65%	35%	00%
Burning micturition	A	00%	45%	50%	05%	00%
	B	00%	45%	45%	10%	00%
Pain	A	00%	65%	35%	00%	00%
	B	05%	50%	45%	00%	00%
Frequent micturition	A	00%	45%	50%	05%	00%
	B	00%	65%	35%	00%	00%
Urine mixed with Blood	A	00%	85%	15%	00%	00%
	B	00%	90%	10%	00%	00%
Albumin	A	00%	30%	65%	05%	00%
	B	00%	30%	65%	05%	00%
Epithelial cells	A	00%	45%	55%	00%	00%
	B	00%	40%	60%	00%	00%
Pus cells	A	00%	65%	35%	00%	00%
	B	00%	70%	30%	00%	00%

Table2: Result of Group A

Variable	Grading on	Mean	SD	SE	T-Value	P-Value	Significance
Yellow color Urine	BT	2.550	0.5104	0.1141	-	-	-
	AT	1.1500	0.3663	0.08192	12.457	0.000	HS
	AF	1.3000	0.5712	0.1277	7.109	0.000	HS
Burning micturition	BT	2.3500	0.4894	0.1094	-	-	-
	AT	1.7500	0.6383	0.1428	4.485	0.000	HS
	AF	1.4000	0.5026	0.1124	7.025	0.000	HS
Pain	BT	2.4500	0.663	0.1535	-	-	-
	AT	2.1000	0.5525	0.1235	3.199	0.005	HS
	AF	1.9500	0.6863	0.1535	3.249	0.004	HS
Frequent micturition	BT	2.3000	0.5712	0.1277	-	-	-
	AT	1.7000	0.5712	0.1277	4.485	0.000	HS
	AF	1.3500	0.4894	0.1094	5.596	0.000	HS
Urine mixed with Blood	BT	1.3500	0.5871	0.1313	-	-	-
	AT	1.2000	0.4104	0.0917	1.831	0.083	S
	AF	1.1000	0.3078	0.06882	2.032	0.056	S
Albumin	BT	2.3500	0.5871	0.1313	-	-	-
	AT	1.6000	0.5026	0.1124	6.097	0.000	HS
	AF	1.2500	0.4443	0.09934	7.678	0.000	HS
Epithelial cells	BT	2.1000	0.4472	0.1000	-	-	-
	AT	1.5500	0.5104	0.1141	4.819	0.000	HS
	AF	1.5000	0.5130	0.1147	5.339	0.000	HS
Pus cells	BT	2.3000	0.5712	0.1277	-	-	-
	AT	1.9500	0.3940	0.08811	3.199	0.005	HS
	AF	1.9000	0.6704	0.1433	3.559	0.002	HS

Table3: Result of Group B

Variable	Grading on	Mean	SD	SE	T-Value	P-Value	Significance
Yellow color Urine	BT	2.4500	0.5104	0.1141	-	-	-
	AT	1.1000	0.3078	0.06882	12.337	0.000	HS
	AF	1.4500	0.5104	0.1141	5.627	0.000	HS
Burning micturition	BT	2.7000	0.7327	0.1638	-	-	-
	AT	2.0500	0.7592	0.1698	4.333	0.000	HS
	AF	1.8500	0.5871	0.1313	6.474	0.000	HS
Pain	BT	2.6000	0.6806	0.1522	-	-	-
	AT	2.2000	0.7678	0.1717	2.990	0.008	HS
	AF	2.2500	0.5501	0.1230	2.666	0.015	S
Frequent micturition	BT	2.4500	0.6048	0.1352	-	-	-
	AT	2.0500	0.5104	0.1141	2.990	0.008	HS
	AF	1.6000	0.5982	0.1338	4.677	0.000	HS
Urine mixed with Blood	BT	1.3500	0.4894	0.1094	-	-	-
	AT	1.2500	0.4443	0.09934	1.453	0.163	NS
	AF	1.0000	0.0000	0.0000	3.199	0.005	HS
Albumin	BT	2.3000	0.4702	0.1051	-	-	-
	AT	1.4150	0.5641	0.1261	5.874	0.000	HS
	AF	1.4500	0.5704	0.1141	6.474	0.000	HS
Epithelial cells	BT	2.2500	0.4443	0.09934	-	-	-
	AT	1.6500	0.4894	0.1094	5.339	0.000	HS
	AF	1.5000	0.6070	0.1357	4.682	0.000	HS
Pus cells	BT	2.1500	0.3663	0.08192	-	-	-
	AT	1.8500	0.3663	0.08192	2.854	0.010	S
	AF	1.7500	0.7164	0.1602	2.027	0.057	S

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