



ISSN 2456-3110

Vol 2 · Issue 2

Mar-Apr 2017

Journal of
**Ayurveda and Integrated
Medical Sciences**

www.jaims.in

JAIMS



Charaka
Publications

Indexed

A Clinical Study of *Gud-Amalaka Yoga* in *Garbhini Mutrakrichra* w.s.r to Urinary Tract Infections during Pregnancy

Sandeep Kumar Rajan,¹ Pankaj Kumar Mishra,² Kamini Dhiman³

¹Lecturer, Post Graduate Department in Prasooti Tantra and Striroga, ²Lecturer, Dept. of Panchakarma, Sri Sai PG Ayurvedic Medical College, Aligarh. ³Associate Professor, Post Graduate Department in Prasooti Tantra and Striroga, All India Institute Of Ayurveda, Delhi, India.

ABSTRACT

Healthy mother and healthy baby are foremost aim of antenatal care. Progressive anatomical and physiological changes during pregnancy are not only confined to the genital organs however within other systems of the body too, some may be felt as discomfort by a pregnant woman. A pregnant woman having pain or burning micturition, fever with chills, nausea, vomiting and cloudy urine having bad smell can be diagnosed as having Urinary Tract Infection (UTI). UTI is most common bacterial infection encountered during Pregnancy and troublesome to the woman suffering from it. Pyelonephritis, premature delivery and other risk such as PROM, IUGR etc. can be the long term result of UTI hence prompt attention is requisite. In the present study *Gud-Amalaka Yoga* has been tried in 15 patients for evaluation of its clinical efficacy and adverse / side effects if any. It was observed that *Gud-Amalaka Yoga* showed better results (25% patients were moderately improved, 75% patients were mildly improved). None of the patient reported any adverse effect during or after the treatment.

Key words: Urinary Tract Infection, Premature Rupture of Membrane, *Gud-Amalaka Yoga*.

INTRODUCTION

Urinary tract infections (UTIs) are the second most common infections in community practice. Incidence of UTI is higher in women than men, 40% to 50% of whom will suffer at least one clinical episode during their lifetime.^[1]

The increase risk factor for UTI in women may be due to short urethra, absence of prostatic secretions, pregnancy and easy contamination of urinary tract

with faecal flora.^[2] Approximately 90% of pregnant women develop ureteral dilation, which will persist until delivery.^[3] And it may contribute to increased urinary stasis and ureterovesical reflux. Additionally, the physiological increase in plasma volume during pregnancy decreases urine concentration and up to 70% of pregnant women develop glycosuria, which is considered to encourage bacterial growth in the urine.^{[3],[4]}

Thus UTIs are the most common bacterial infections during pregnancy, with pyelonephritis being the most common severe bacterial infections complicating pregnancy.^[5] Recurrent infection cause considerable morbidity, if complicated, it can cause severe renal disease.^[6]

Modern medical management of UTI includes chiefly antibiotics. Use of antibiotics for long time in pregnancy may cause bad effects on growing fetus and presently chance of resistance is high. Due to development of resistance to present day antibiotics there is needed to evaluate new antibiotics which are

Address for correspondence:

Dr. Sandeep Kumar Rajan

Lecturer, Post Graduate Department in Prasooti Tantra and Striroga, Sri Sai PG Ayurvedic Medical College, Aligarh.

E-mail: sandeepprajan2003@gmail.com

Submission Date : 06/04/2017

Accepted Date: 28/04/2017

Access this article online

Quick Response Code



Website: www.jaims.in

DOI: 10.21760/jaims.v2i2.7696

equally effective. Although a lot of classical references of drugs on *Mutrakrichhra*^{[7],[8]} are available in *Ayurvedic* texts. It is imperative for us to prove the antimicrobial properties of the mentioned drug using scientific parameters. *Acharya Sushruta*^[9] and *Acharya Charak*^[10] has explained *Mutrakrichhra* under *Mutravahastroto Dusthi Vikara*. Symptoms of U.T.I. like Burning Micturition, Abdominal pain, and increased frequency are same in *Mutrakrichcha Vyadhi*.

Classical formulations are mentioned in classics to combat this problem. To evaluate the role of classical formulations in problem like urinary tract infection on objective criteria is the need of the day. One classical formulation *Gudamalaka Yog* mentioned in *Chakradutta*^[11] and to know the efficacy of the drugs in the light of objective as well as subjective criteria if found to be effective. So the study has been taken on "A Clinical Study of *Gud-amalaka Yog* in *Garbhini Mutrakrichhra* w.s.r. to Urinary Tract Infections during Pregnancy". This study was undertaken with following objectives.

OBJECTIVES

To know the efficacy of *Gud-amalaka Yog* w.s.r. to UTI in *Garbhini* and to establish the safe and cost effective medicine for the treatment of *Mutrakrichhra* in *Grabhini*.

Methodology

The present study was conducted in the department of Prasuti Tantra and Stri Roga OPD / IPD of hospital affiliated to R.G.G.P.G. Ayu. College and Hospital, Paprola, Dist. Kangra (HP) during 2015. The study consisted of 15 Pregnant females age group of 20-35yrs having pregnancy of 24-36 weeks of G.A. with complaint of urinary tract infection. The detailed history regarding the age, complaint and its associated symptoms was interrogated and recorded. The collected data was analyzed statistically.

Protocol during Trial

- Fulfillment of inclusion criteria.
- Consent of patient after making them aware of the merits/demerits of the trial.

- Registration of the patient.
- Investigations and management of patients before inclusion into the trial.
- Follow up of the patients for assessment and clinical evaluation.
- Statistically analysis and presentation of data.

Inclusion Criteria

- Patients willing for the trial.
- Pregnant female patients age group of 20-35yrs having pregnancy of 24-36 weeks of G.A.
- Patients fulfilling diagnostic criteria

Exclusion Criteria

- Patients not willing for trial.
- Patients suffering from medical illness like Polycystic kidneys, Hydronephrosis, Impaired renal functions, Malignancy of urinary tract, Immuno-compromised patient, Pregnancy induced hypertension.
- Gestational Diabetes, K/c/o Thyroid dysfunction with pregnancy.
- Patients Complications of pregnancy like placental abnormalities,
- Polyhydramnios

Diagnostic criteria

- Pregnant females presenting symptoms of mutrakricchra w.s.r. UTI.
- Lab Investigations of urine suggestive of UTI.

Drugs

Gudamalaka Yoga - *Gud* (jaggary), *Amalaki* (*Emblica officinalis*)

Method of preparation

Fresh fruit of *Amalaki* were taken and verified by Dravyagunadepartment After that fruits were boiled till it became soft, then the pisti was prepared by removing seeds and fibres after that jaggery was added in the pisti and converted into candy form. Weight of candy was kept as 5gm.

Investigation

All the selected patients were subjected to routine investigation, which included the following

- Biochemical examination Hb_{gm}%, TLC, DLC. ESR, Glucose tolerance tests (GTT), Renal function tests (RFT), HIV (Human immuno-deficiency virus).
- Urine routine and microscopic examination
- Radiological Investigation:-USG for whole abdomen including urinary system (KUB) was done to rule out any pathology in urinary tract.

Consent of the Patients

All patients selected for trial were explained the nature of the study and their written consent was, obtained on the consent form attached with the Proforma, before the commencement of the clinical trial.

Treatment protocol

15 patients fulfilling the inclusion criteria were selected for the study and patients were treated with *Gud-Amalaka Yog*. The *yog* was given in the candy form as one candy (5gm) thrice in a day for the duration of 15 days.

Follow up

- Two followup at weekly interval during treatment.
- One followup after 15 days of drug free period after the completion of treatment.

Instructions to the patients

The Do's and Don't's were advised to every patient.

Do's

The dietary and behavioral schedule advised to patients

- a. High liquid intake, at least 3 liters a day.
- b. Fruits containing high water content e.g. coconut.
- c. Use of *Takra* and curd.
- d. Maintenance of good perineal hygiene.
- e. Complete and frequent emptying of the bladder.

- f. Voiding before and after coitus.

Don't's

The dietary and behavioral schedule prohibited to the patients.

- a. Low intake of water.
- b. Poor personal hygiene.
- c. Over indulgence in sexual activity.
- d. Suppression of the urge of micturition.

Assessment of the Patients

Assessment of the effects of therapy was done on the basis, of various subjective and objective criteria. Patients were, assessed after one week of the commencement of clinical trial and after completion of trial i.e. after 15 days. In first follow up, the patients were assessed on clinical grounds only. The patients who did not come for follow up were considered drop out. At the end of 15th days, final detailed examination of the patients was, carried out including all investigations.

Assessment Criteria

Assessment of clinical features on subjective criteria (*sadah mutrata* (burning micturition), *saruja mutrata* (painful micturition), *krachhra- mutrata* (difficulty in micturition), *muhur- muhur mutrata* (increased frequency of micturition) urgency, suprapubic pain) and objective criteria (presence of Albumin, Epithelial Cells, Pus Cells, RBC in urine) was assessed by evaluating already mentioned laboratory findings, which were carried out at the time of commencement of clinical trial. some of these were assessed by grading them and other were assessed by simply evaluating the results obtained from them as follows.

Statistical Analysis of Results

The information gathered regarding demographic data was given in percentage. The data related to clinical features and laboratory investigations was collected and then statistically analyzed. The scoring of criteria of assessment was analyzed statistically in terms of mean values of B.T.(Before Treatment), A.T. (After treatment), S.D. (Standard Deviation) and

S.E.(Standard Error).The effect of therapy in both the groups was assessed by applying students paired t' test for comparing before treatment and after treatment scores of assessment criteria. For intergroup comparison unpaired t test was applied. Their significance was estimated by means of 't' table on (n-1) degrees of freedom. 't' test was carried out at $p < 0.05$, $p < 0.01$, $p < 0.001$. The obtained results were interpreted as:

- Insignificant - $p < 0.05$
- Significant - $p < 0.01$
- Highly significant - $p < 0.001$

Total effect of therapy

Steps for calculating overall percentage of improvement of individual patient; All the BT score of every symptoms of a patient were added. All the AT score of every symptom of that patient were added. Overall percentage of improvement of each patient was calculated by the formula:

$$(\text{Total BT} - \text{Total AT}) / \text{Total BT} \times 100.$$

The obtained results were measured according to the grades given below:

- Complete Remission : 100% relief
- Marked Improvement : $\geq 75\%$ relief
- Moderate Improvement : 50 % to 75 % relief
- Mild Improvement : $< 50\%$ relief
- Unchanged : $< 25\%$ or No relief

OBSERVATION AND RESULTS

Total 15 patients were registered for the clinical study. The demographic data of 15 patients were presented. maximum number of patients 36% were observed in age group of 26 -30 yrs, 60% were observed to be affected at fetal gestational age of 24 - 28 wks, 67% patients were of primigavida, 100% patients of both the groups were of Hindu religion, 87% belonged to rural habitat, 73% were house wives, 40% were educated up to Primary level, 66.67% were of lower middle class, 60%were vegetarian, 40% had normal appetite, 50% were following medium

hygiene, 70% were of *Vata-Pittaja Prakriti*. Clinical features wise distribution of both group showed that 100% had increased frequency of micturition 11-20 times/day, 87% had burning micturition,70% patients had suprapubic pain, 60% patients had urgency of micturition, 50% patients had difficult micturition and 40% had painful micturition. Urine analysis showed that all patients i.e.100% having yellow coloured and acidic urine, pus cells and epithelial cells. Albumin was observed in 33% and R.B.C. was observed in 30%.

Effects of the therapy

A total of 15 patients were registered for present clinical study. Out of them 12 patients completed the total duration of trial and 3 patients was dropped out. So clinical data was presented on 12 patients.

Table 1: Effect of therapy on clinical Profile of patients.

Variables	N	Mean Score		D	% Relief	±S. D.	±S. E.	t	p
		BT	AT						
Burning Micturition	12	3.00	1.75	1.250	41.66	0.866	0.250	5.00	<0.050
Painful Micturition	9	2.25	1.25	1.000	44.44	0.953	0.275	3.63	<0.050
Difficult Micturition	8	2.00	1.25	.750	37.50	0.622	0.179	10.58	<0.050
Frequency of Micturition	12	3.00	1.91	1.08	30.55	0.900	0.260	4.16	<0.050
Urgency	9	2.25	1.33	0.91	40.74	0.909	0.288	3.18	<0.050

Suprapubic Pain	12	300	183	116	38.88	0.577	0.167	7.0	<0.050
-----------------	----	-----	-----	-----	-------	-------	-------	-----	--------

Table 2: Effect of therapy on microscopic findings of urine.

Variables	N	Mean Score		D	% relief	±S. D.	±S. E.	t	p
		BT	AT						
Albumin	6	1.47	1.167	0.250	17.64	1.505	0.434	1.915	<0.050
Pus cells	12	3.00	1.91	1.08	36.11	.90	0.26	4.16	<0.050
Epithelial cells.	12	3.00	1.67	1.33	44.44	1.07	0.310	4.304	<0.001
R.B.C	08	1.25	0.125	1.12	29.60	0.83	0.30	3.81	<0.01

Table 3: Overall effect of therapy

Result	No. of patients	%
Completely Remission (100% relief)	0	0
Marked Improvement (75 to 99% relief)	0	0
Moderate Improvement (50 to 74% relief)	3	25
Mild Improvement (< 50% relief)	9	75
Unchanged (0% relief)	0	0

Through grade score system, 25% patients were moderately improved, 75% patients were mildly improved.

DISCUSSION

Guda - By increasing volume of urine, it increases frequency of micturition. So there is less chance of bacterial colonization.

Amalaki - Due to *Tridosha Shamaka* and *Sheeta Veerya* properties of *Amalaki* may have *Shamaka*

effect on the disease UTI. It enhances all the thirteen *Agnis* and supports *Apana Vata* and helps to eliminate waste products from the body but does not over stimulate the urinary system.^[12] Bhattacharya *et. al.* in a study on the hydroalcoholic extracts of three components of *Triphala* powder have reported varying degrees of strain specific anti bacterial activity against multi drug resistant uropathogenic bacteria and quoted that drug resistant does not interfere with the anti bacterial potential of *Triphala* components.^[13]

CONCLUSION

Gudamalaka Yoga showed statistically significant results. Hence in further study to reestablish its role or to get better results, preparation methodology of the dry drug can be modified or the dose can be increased. *Gudamalaka Yoga* can be used effectively in infections and delaying the recurrence.

REFERENCES

1. D. Leigh "Urinary Tract Infections," In: G. R. Smith and S. F. Easma Charles, Eds., Topley and Wilson's Principles of Bacteriology, Virology and Immunity, Butler and Tanler Ltd., Frome and London, 1990, pp. 197-214.
2. A. M. Awanees, M. G. Al-Saadi and S. A. Aadoas, "Antibiotics Resistance in Recurrent Urinary Tract Infection," Kufa Medical Journal, Vol. 3, 2000.
3. J. E. Delzell Jr. and M. L. Lefevre, "Urinary Tract Infections during Pregnancy," American Family Physician, Vol. 61, 2000, pp. 713-720.
4. T. F. Patterson and V. T. Andriole, "Bacteriuria in Pregnancy," Infectious Disease Clinics of North America, Vol. 1, 1987, pp. 807-822.
5. F. G. Cunningham and M. J. Lucas, "7 Urinary Tract Infections Complicating Pregnancy," Baillière's Clinical Obstetrics and Gynaecology, Vol. 8, No. 2, 1994, pp. 353-373. doi:10.1016/S0950-3552(05)80325-6
6. Kumar and Clark clinical medicine, Parveen kumar and Michael Clark, Fifth edition, Renal disease, Urinary tract infection pg-615-620.
7. Mutrakrichcha Nidanam, Prof. K. R. Srikant Madhav Nidan, Chaukhambha Orientalia Varanasi, pg- 108-109, Chapter 30.

8. Mutraghath Nidanam 9/2-5 Kaviraj Atridev Gupta, Astanga Hridayam, Chaukhambha Prakashan Varanasi, pg- 340.
9. Ambikadatta shastri, Sushruth Samhita part-2, Uttartantra, Chaukhambha Samskrit Sansthan Varanasi, pg-549-552, Chapter-59.
10. Vidyotini Hindi commentary, Charak Samhita, Chikitsasthan, Chaukhamba Bharti Academy Varanasi pg-723. Chepter-26.
11. Chakradatta of Shri Chakrapanidatta with Bhavartha Sandipani Hindi Commentary by Sh. Jagdishawar Prasad Tripathi, Chaukhambha Bharti academy, 4th edition, 1976. (CH. D. 31/7)

12. Tibetan Medicinal Plants Publication, IJEB Vol 51(09) Sept 2013

How to cite this article: Sandeep Kumar Rajan, Pankaj Kumar Mishra, Kamini Dhiman. A Clinical Study of *Gud-Amalaka Yoga* in *Garbhini Mutrakrichra* w.s.r to Urinary Tract Infections during Pregnancy. J Ayurveda Integr Med Sci 2017;2:19-24.

<http://dx.doi.org/10.21760/jaims.v2i2.7696>

Source of Support: Nil, **Conflict of Interest:** None declared.
