

## THE CORE OF THE PSEUDOSTEM OF MUSA IN THE TREATMENT OF URINARY STONES

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**ABSTRACT:** Ayurveda recommends many simple herbs in the treatment of urological afflictions like urolithiasis. Seventyone patients diagnosed to be suffering from urolithiasis were treated with juice of the core of the pseudostem of *Musa Paradisiaca* and *Musa sapientum*. A significant segment of them passed out calculi of varying size after consuming the drug for two weeks. Recurrence of stone formation was also prevented by the treatment. The author concludes that the plant material is quite effective in curing urolithiasis, especially of the calcium oxalate variety.

### INTRODUCTION

The number of persons in India suffering from urinary stone is very high and their ranks swell day by day. At least two patients with symptoms of stone disease are identified in a district hospital every day. Available methods like surgery, percutaneous nephrolithotomy (PCNL), laser and extracorporeal shock wave lithotripsy (ESWL) are rewarding in calculus removal<sup>1</sup>. But ESWL and PCNL are too expensive for the common man. Surgical intervention is time consuming and causes loss of manpower days. All these approaches have their own short comings also.

“Once a stone former always a stone former” so goes the adage. The problem of recurrent stone formation always troubles the urologist. Neither a successful lithotripsy nor surgery can prevent stone formation<sup>2</sup>. This necessitates the need for finding our alternate methods.

Ayurveda, the traditional medical system practiced in all parts of India, especially kerala, has a rich repertory of herbal

formulae. Practitioners of traditional medicine often employ several parts of the plantain tree in the treatment of urinary disorders. Therefore, this study was undertaken to assess the lithotritic property of the core of the pseudostem (extension of the flowers stalk) of *Musa paradisiaca* and *Musa sapientum*. These species were specially Selected as they are considered to be more effective by practitioners of traditional medicine. These plants are widely distributed in the province and there is hardly any house which does not have a *Musa* plant in its vicinity.

### MATERIAL AND METHODS

#### Preparation of the test material

Large quantities of the core of the pseudostem of *M. Paradisiaca* and *M. sapientum* were collected from banana plantations. The material was chopped, ground in a grinding machine and passed through a cloth bag. The juice so extracted was heated under slow fire (to prevent charring) and the tar-like residue was collected. The material was rolled into

tablets which were balckish and highly hygroscopic. They were packed immediately in Plastic bags and refrigerated. Each tablet weighed approximately 600 mg and was equivalent to 100 ml of fresh juice. For the sake of convenience the tablets will be hereafter referred to as *Musadin*.

### **Selection of Patients**

Patients attending the urological out-patient department of District Hospital, Kollam were selected for this study. Those patients with symptoms suggestive of urinary calculi were screened initially with K.U.B.U (Kidney-Urethra-Bladder-Urethra) X-ray. Once a radio opaque shadow was detected, an intravenous urogram (IVU) was performed to confirm the diagnosis of obstructive changes and congenital abnormalities of the renal system.

After confirming the diagnosis of urinary calculi, the patients were informed of the various treatments available and those willing to undergo trial with *Musadin* were enlisted for the study. Each patient was given a questionnaire and written consent was obtained before accepting them for treatment, the patients were given the medicine for two weeks and symptomatic and clinical reviews were done every week.

### **Investigations**

In addition to the radiological investigations mentioned, blood and urine samples were analysed for various suspected aetiological factors. Basic investigations such as haemoglobin content, total count of RBC and WBC, differential count of WBC, ESR, blood urea and serum creatinine were followed by serum calcium, uric acid, phosphorus, zinc, magnesium and copper. Urine was examined for albumin, glucose,

pH, deposits, microorganisms and their sensitivity to antibiotics<sup>3</sup>.

### **Clinical Groups**

The patients (118 males and 13 females ranging in age from 20 to 61 years) were divided into two groups.

#### **Group I**

Those patients whose IVU showed minimal or no obstructive change were included in this group. Patients of this group had normal serum levels of urea and creatinine, The aim of administering *Musadin* was:

- a. to relieve symptoms
- b. to dissolve the stones and
- c. to expel the stones.

These patients were started on half tablet of *Musadin* twice daily. After two weeks the dose was increased to 1 twice daily and later to a maximum of 2 tablets, three times daily. 104 patients were included in this group.

#### **Group II**

Patients with raised blood urea and creatinine levels as well as gross obstructive changes in IVU were taken up for surgery and calculi removed, Post-operatively they were put on half a tablet of *Musadin* daily. The dose was increased to 1 tablet daily after two weeks. The aim of administering *Musadin* to this group was to prevent the recurrence of urinary calculi. This group included 11 patients.

### **Drop-out rate**

Out of 131 patients registered 16 did not turn up t all to collect, *Musadin* tablets. Out of the remaining 115 patients, 44 patients dropped out within a period of one month. This included 39 from group I and 5 from

group II. Thus only 71 patients took *Musadin* for over four weeks.

### In vitro Experiment

This experiment was conducted to find out the effect of *Musa* Juice on urinary calculi. A calculus removed surgically was divided into three pieces, One piece was suspended in distilled water. The second piece was suspended in freshly collected *Musa* Juice. The third piece was kept in a suspension of *Musadin* in distilled water. All fluids were replaced every 24 hours and the experiment was terminated after seven days.

### RESULTS

Among the 71 patients who had taken *Musadin* for over four weeks, 43 passed out varying number of calculi after taking the drug. The calculi passed out varied from the size of black pepper to that of a groundnut. The split-up figures based on location of the stones are as follows: calyx-6, pelvis-7, upper ureter-9, middle ureter-7 and lower ureter-14. The size of calculi varied from 0.2 to 1.3. All calculi belonged to the calcium oxalate group. Repeat K.U.B.U. X-ray showed a reduction in the number of calculi in 4 patients and disappearance of calculi in 20 patients. Those patients in whom there was complete disappearance of the radio-opaque shadows were put on prophylactic dose of *Musadin* (1.O.D)

### In vitro Experiment

### REFERENCES

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The calculus suspended in distilled water showed no change even after a week. The piece suspended in *Musa* Juice became soft and disintegrated into smaller particles by one week. The same fate followed the calculus immersed in the suspension of tablets of *Musadin*.

### CONCLUSIONS

The traditional medical system of Kerala has many effective remedies for certain diseases, urolithiasis being one among them<sup>4</sup>. Instead of adopting a negligent outlook, the medical fraternity should venture to study scientifically the efficacy of these medicines. The present investigation, though of a preliminary nature, definitely suggests that the core of the banana pseudostem can be used in the treatment of urolithiasis, especially of the calcium oxalate variety. The finding the *Musa* juice lowers serum cholesterol is also quite interesting.

Urolithiasis and many types of cardiovascular diseases are widely prevalent in developing countries<sup>5</sup>. It is suggested that research work is undertaken to explore the possibility of curing these afflictions with inexpensive, yet effective herbal remedies. The present report is a pointer to that direction.

### ACKNOWLEDGEMENTS

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