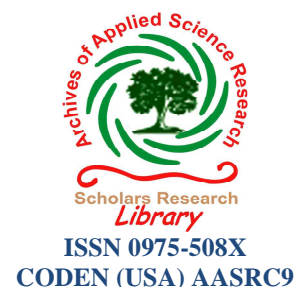




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On the nature of a herbal medicine curing kidney stone: A spectroscopic evidence

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ABSTRACT

The present work describes the nature of a herbal medicine in liquid phase, prepared by a native of Tinsukia district of Assam. Kidney stone of moderately big size (13.9 x 9.4 mm) of a particular female patient is completely dissolved after she took the herbal medicine 10 ml thrice daily for ten days. X-ray photographs and ultrasound record taken before and after taking the medicine indicates beyond any doubt that the particular uric acid type stone is absent. Earlier the patient was treated with various procedures like, lithotripsy (thrice), with and without introduction of a ureteral stent, but without any effect. An X-ray and ultrasound photographs decisively prove the positive effect of the native medicine. In the present work we describe the scientific basis of the miraculous effect based on the available literature in recent times.

INTRODUCTION

Various solid deposits like urinary stones and gallstones formed in human bodies are of keen interest to biochemists due to the complicated reactions involved in it. These solid deposits are inactive, irreversible and represent a permanent phase. The process of formation of these solid deposits is not completely understood as the changes takes place over a long period. The occurrence of moderately large urinary stones may cause severe pain, urinary tract obstruction, infection and can lead to complete renal damage. The causes of this disease are varied and range from dietary habits and metabolic anomalies to genetic disorders. The composition of urinary stones differs from atherosclerosis or gallstones in that they contain a large proportion of low molecular weight, crystalline components like calcium oxalate monohydrate, uric acid, ammonium acid urate, cysteine and carbonate apatite. The formation of stones is generally linked with an excess of relatively less soluble salts like ammonium acid, uric acid and calcium oxalate monohydrate. Two basic factors are regarded to be responsible for renal stone formation. They are (i) changing composition of urine and structure of urine tract itself. Other factors are also important. For example, changes in the colloidal fraction (such as protein) of urine, due to changes in its composition or PH have a considerable influence on the solubility of various components in it. A significant role can also be attributed to a small amount (2.5% dry weight) of organic matter consisting basically of proteins (64%) non amino sugars, hexose sugar and bonded water. Organic matters provide binding matrix for crystalloids and help in increasing the size of the stone. These observations are of great clinical significance and have helped in analyzing the genesis and control of these diseases. Calcium salts, uric acid, cysteine and struvite (MgNH_4PO_4) are the basic components of most kidney stones¹. Calcium oxalate monohydrate crystals (whewellite) usually grow as biconcave ovals that resemble red blood cells in shape and size but may occur in bayer, dumbbell form. Calcium oxalate dehydrates are weakly birefringent. Uric acid stones are radiolucent and are usually common in men. Cysteine stones are uncommon.

Struvite stones are common and potentially dangerous. The stone can grow to a large size and fill the renal pelvis and calyx to produce “staghorn” appearance. The present work describes the nature of a herbal medicine in liquid phase prepared by a native of Tinsukia district of Assam. Kidney stone of moderate size (13.9x9.4mm) of a particular female patient is completely dissolved after she took the herbal medicine 10ml.thrice daily for ten days .X-ray photograph and ultrasound record taken before and after taking the medicine indicates beyond any doubt that the particular uric stone type stone is absent. Survey of available literature indicates that the present communication is first of its type which describes the scientific basis of the claim of a herbal medicine.

MATERIALS AND METHODS

As regards the experimental procedure it is worthwhile to note that the patient (female age 50years) with kidney stones (sizes 13.9x9.4mm and 11.6x8.5mm)was treated with various procedures like Lithotripsy with and without introduction of a ureteral stent ,but without any effect.Fig.1(A,B,C,D,E) shows the positions of the stones at successive stages of treatment .Fig 1A shows the position of the stone against the background of the stent without any lithotripsy procedure being applied.Fig1 (B,C&D) shows the positions of the stones against the background of the ureteral stent after the patient was subjected to lithotripsy .Fig 1E shows the X-ray photograph of the region in the absence of the ureteral stent.

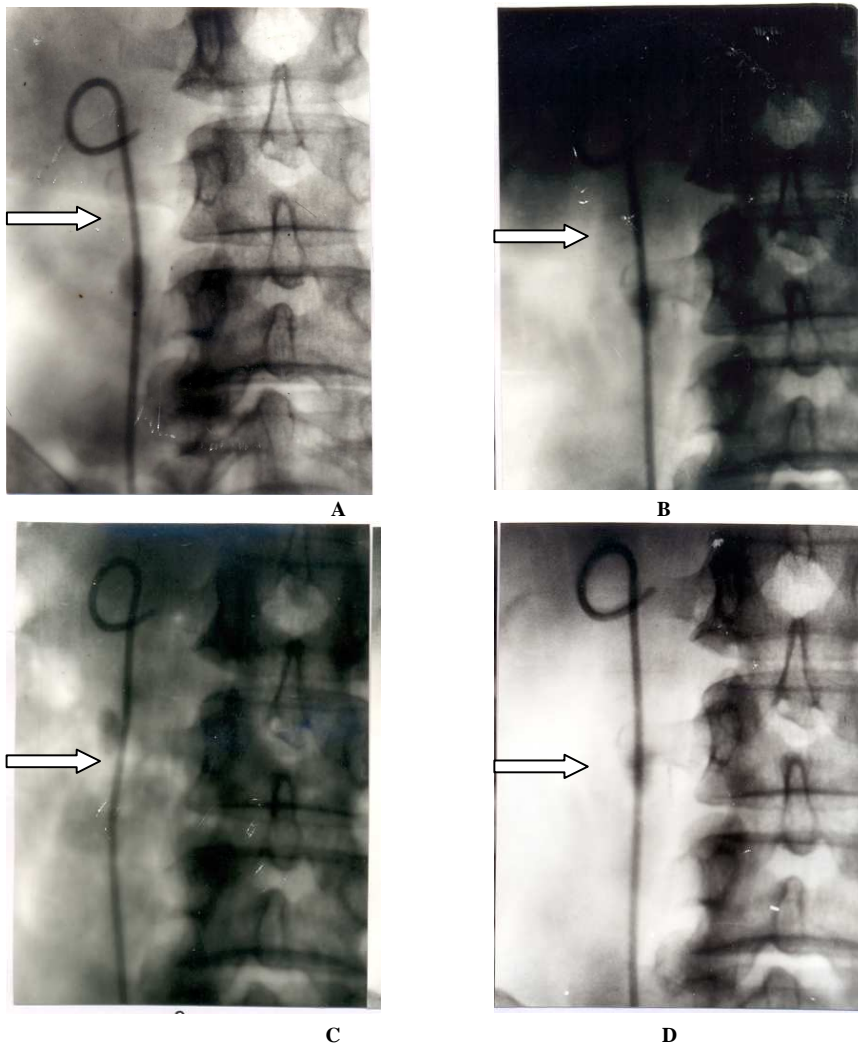




Fig.1(A,B,C,D,E) shows the positions of the stones at successive stages of treatment Arrow head shows the position of the kidney stone

RESULTS AND DISCUSSION

As may be inferred from Fig1(B,C&D) there is hardly any effect of lithotripsy on the stone. The general belief that the stone could not be located anywhere in the urinary tract. It is to be noted here that the ureteral stent was removed prior to the use of the herbal doses of medicine. Ultrasound photographs also indicated the absence of any stone in the urinary tract. In fact it was not known exactly the constituents of the herbal medicines used for curing the urinary calculi. But one of the major constituents is said to be molluscan shells which are locally available in abundance. The reason behind using the molluscan shells in the herbal potion is not known. But from what will be described below it appears that the presence of molluscan shells in the potion is important and provides us with a scientific basis of the phenomenon. The molluscan shells are basically made of calcium carbonates. Calcium oxalate stones accounts for 90% of kidney stone incidence. The majority of these calcium containing kidney stones are associated with unexplained hypercalciuria (elevated calcium in the urine), although diseases such as hyper-parathyroidism, sarcoidosis and some cancers can contribute to stone formation. Since 20-40% of recurrent stones are associated with elevated urinary calcium, it has been thought that consumption of high levels of calcium might cause or contribute to stone formation. In the past, it was not uncommon for patients with renal stones who also have hypercalciuria to have their intake of calcium sharply restricted. Medical science has shown, however, that stones can be prevented successfully without restricting calcium intake, provided that a number of other measures are also followed. Moreover, there is some evidence that calcium restriction may actually increase the risk of kidney stones under certain conditions. The largest prospective trial ever published on calcium and kidney stones concluded that high calcium intake decreases the risk of symptomatic kidney stones². Perhaps just as importantly, the study, conducted among over 45000 persons, found that those individuals consuming less than 850 mg of calcium per day had a higher incidence of kidney stones. The authors, as well as many previous investigators have also concluded that urinary oxalate appears to be more important than urinary calcium in the formation of stones. This conclusion was supported by a subsequent study on long-term calcium supplementation in pre-menopausal woman which found no increase in stone formation³. Curhan et al. in 1993 published data on calcium intake and stones⁴. In this study the authors conducted an analysis among woman participating in the Nurses Health Study over 12 years period who had no prior history of kidney stones. They found that higher dietary calcium intake was correlated with fewer kidney stones. In another work only two cases of kidney stones were reported in 2295 women taking 2000mg of supplemental calcium carbonate per day⁵. These results indicate that reduction of calcium intake is not advisable as a way to reduce kidney stone risk. From what has been described above it is apparent that calcium carbonate plays a dominant role in preventing the formation of kidney stones.

Since the herbal medicine has miraculously removed the stone from the tract it is reasonable to believe that the high dose of calcium carbonate present in the high dose of calcium carbonate present in the molluscan shell is responsible for curing the kidney stone disease. FTIR spectrum for the sample indicates the presence of prominent carbonate bands. Perhaps it is a coincidence that this (ethno) native medicine has cured many patients but calcium carbonate is

the main ingredient which provides us with a scientific basis for the phenomenon. We must emphasize here that vibrational spectrum has given the clue about the nature of the medicine.

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