1. INTRODUCTION

Urinary stone disease continues to reside in an important place in daily urological practice. The average lifetime risk of stone formation has been reported in the range of 5-10%. A predominance of men over women can be observed with an incidence peak between the fourth and fifth decade of life. (Yadav R. D., 2011). Urinary stone disease is a common disorder estimated to occur in approximately 12% of the population, with a recurrence rate of 70–81% in males, and 47–60% in females. Occurrence of urolithiasis requires formation of a nidus, its retention and growth in the urinary tract which may cause obstruction of the ureter. (Souccar C., 1999). Pathophysiologically, urolithiasis occur as a result of the breakdown of a balance to be maintain by the kidneys i.e. excretion of materials that have a low solubility and maintenance of water. These two opposing requirements must be balanced during adaptation to diet, climate and various activities. Whenever the urine becomes supersaturated with insoluble material, because excretion rates are excessive and/or reduced water conservation, crystals are formed, grow and aggregate to form a stones. (Baheti D. G., 2013).

Calcium-containing stones are the most widespread comprising about 75% of all urinary calculi, which may possibly in the form of pure calcium oxalate (50%) or calcium phosphate (5%) and a combination of both (45%). Calcium oxalate stones are found in two dissimilar varieties, calcium oxalate monohydrate (COM) or Whewellite, and calcium oxalate dihydrate (COD) or Weddellite. (Joshi M.J., 2005). It is important to point out that urolithiasis is characterized by high repetition rate requiring therefore a preventive treatment. Among the treatments used are extracorporeal shock wave lithotripsy (ESWL) and drug treatment. Even better and beside the high cost that imposes, compelling data now suggest that exposure to shock waves in therapeutic doses may cause acute renal injury, decrease in renal function, and an increase in stone recurrence. In addition, persistent residual stone fragments and possibility of infection after ESWL represent a serious problem in the treatment of stones. Also, even though drug treatment has shown some feasibility in many randomized trials, it is not accomplished without side effects, which are sometimes very serious. Therefore, it is worthwhile to look for an alternative to these means by using medicinal plants or phytotherapy. Indeed, herbal medicine is as ancient as the history of mankind. (Atmani F. 2004). Many remedies have been employed during the ages to treat urinary stones. In the traditional systems of medicine, most of the remedies were taken from plants and they were
proved to be useful though the rationale behind their use is not well established through systematic pharmacological and clinical studies except for some composite herbal drugs and plants. The recent treatment procedures like surgical removal, percutaneous techniques and extracorporeal shock wave lithotripsy (ESWL) are prohibitively costly for the common man and with these procedures recurrence is quite common and the patient has to be subjected to careful follow up for a number of years. Pharmacotherapy can reduce the recurrence rate. The use of plant products with claimed uses in the traditional systems of medicine assumes importance. (Prasad K.V.S.R.G., 2007).

The recurrence of urolithiasis represents a serious problem, as patients who have formed a stone are more likely to form another, and thus stone prevention is highly recommended. Currently, open renal surgery for nephrolithiasis is unusual and used only rarely since the introduction of ESWL, which has revolutionized urological practice and almost become the standard procedure for eliminating kidney stones. However, in addition to the traumatic effects of shock waves, persistent residual stone fragments, and the possibility of infection, suggest that ESWL may cause acute renal injury, a decrease in renal function and an increase in stone recurrence. Furthermore, although some drugs used to prevent the disease have some positive effects, they are not effective in all patients and often have adverse effects that compromise their use in long-term medical treatment. Alternative treatment using phytotherapy has been sought; indeed, in recent years there has been a resurgence of interest in medicinal plants that are effective, safe and culturally acceptable. (Atmani F., 2003).

Calcium oxalate is one of the main constituents of deposits in urinary tract. Crystallisation of calcium oxalate is of particular interest not only from the theoretical point of view but also because of its biological importance. The exact mechanism of the initiation of the calcium oxalate stone formation is not completely understood. Factors leading to the nucleation, crystal growth and aggregation of various hydrates of calcium oxalate depend not only on the excess of calcium and oxalate concentrations but also on the presence of various foreign substances. A number of studies have been carried out to determine the effect of various additives such as metallic ions and their complexes, sodium dodecyl sulphate, α-ketoglutaric acid (a normal physiological constituent of urine), plant extracts, maleic acid copolymers and a protein from human kidney on inhibition of calcium oxalate crystallisation. (Beghalia M., 2008).
Abutilon indicum species has been widely used as medicine in Ayurvedic system of medicine. Abutilon indicum (Malvaceae), commonly known as “Thuthi” is distributed throughout the hotter parts of India. Abutilon indicum commonly known as “Atibala” in Sanskrit gives excessive tonic strength. Phytoconstituents like β-Sitosterol (0.2%), tocopherol oil (0.3%) were isolated. Abutilon indicum is rich of fatty acids like linoleic acid, oleic acid, palmitic acid, stearic acid and capric acid along with vanillin, p-coumaric acid, p-hydroxybenzoic acid, caffeic acid and fumaric acid. p-β-Dglucosycoxybenzoic acid, glucovanilloyl glucose, fructose, galactase, glucose, leucine, histidine, threonine, serine, glutamic acid and aspartic acid. Two sesquiterpene lactones Alantolactone, isoalanto-lactone. Gallic acid, it also contains flavonoids like luteolin, chrysosieriol, luteolin-7-O-β gluco pyranoside, chrysosieriol 7-O-β gluco pyranoside, apigenin 7-O-β-gluco pyranoside, Quercetin 3-O-β-gluco pyranoside, Quercetin 3-O-α rhamnopyranosyl, β-gluco pyranoside. (Golwala D. K., 2010). Indian traditional systems of medicines like Siddha and Ayurveda have suggested to increase the body’s natural resistance to disease. Recent screening with plants has revealed many compounds (e.g. alkaloids, flavonoids, quinones, terpenoids) with pronounced antioxidant, antineoplastic, antiulcer, anti-inflammatory and immunostimulating potential. Atibala is a stronger diuretic and heart tonic. AI reported in the Siddha system as a remedy for jaundice, piles, ulcer, leprosy, rakttapitta dosha and blood purifier. Chemically it contains flavonoids (quercetin), saponins, alkaloids and phenolic compounds. (Dashputre N. L., 2010)