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A REVIEW ON TRIDEX PROCUMBEN FOR THE TREATMENT OF KIDNEY STONE

[1]MONIKA R. MARKAD, [2]RUTUJA R. RATHOD, [3]VAISHNAVI A. KHEBDE,

[4] PRIYA G. SOLUNKE

B PHARMACY FINAL YEAR

RAOSAHEB PATIL DANVE COLLEGE OF PHARMACY

❖ **ABSTRACT:**

A medicinal plant Tridax procumbens mainly known as coat button Or ghamara Or kansri belongs to family Asteraceae. This tree found to be beneficial as stimulant expectorant treatment of scabies. The important pharmacological activity is that asthma chronic bronchitis leucorrhoea .It is a plant used majorly in Indian traditional medicine and also use by different communities. It is a very promising secondary metabolites such as alkaloid, steroids. carotenoid. Tannin, flavonoid (centaurein , catechins and bergenins), fatty acid, minerals and phytosterols , reported to have a different of medicinal uses including in treatment of kidney stone , antioxidant, antibacterial, anti- inflammatory, antimicrobial, vasorelaxant, antileishmanial, anti-anemic, immunomodulatory .The effect of tridex procumben leaf on crystal growth aggregation the plant extract could readily inhibit crystal formation , which indicate antilithiatic activity of plant tridex procumbens .

❖ **KEYWORDS:** tridex procumben, antilithiatic activity , kidney stone , uses, pharmacology .

❖ **INTRODUCTION:**

Tridax procumbens has belongs to the family Asteraceae or composite, 7 halder and T inilabase are the other species of the genus. Called as Kansari (Hindi) or Coat Button or trilobata are the different species of the genus . . It as unannual or perennial weed from Central America and found through in India especially in Chhattisgarh, Maharashtra, Madhya Pradesh regions it used as a weed. Tridex procumben has different pharmacological properties such as containing but not limited to: immunomodulatory. Kidney stone, Anti-oxidant. Anti-microbial, anti-hepatotoxic, analgesic, antidiabetic, anti- inflammatory, antifungal activities. Tridax procumbens, is a peremual plant from the Asteraceae family native to Central and South America (Hilliard, 1977, Ravi Kumar et al. 2005b), Since ancient times, this species has been used in Ayurveda in India (Kethamakita and Deogade.Most of the anti-inflammatory drugs, particularly steroids and cyclooxygenase inhibitors are often associated with the side effects in tridex procumben including GI irritation, ulcers, hypertension and cardiac abnormalities. Drugs from plant sources have been used for the treatment of various disorders and diseases since ancient times. Phytochemical screening of tridex procumben was also carried out by HPLC, FT-IR and UV-Vis analysis. Kidney stone is a disease contain crystal concretion formed usually within the kidneys. It is an increasing urological disorder of human health, it affects about 12% of the total world population. It has been associated with an increased risk of end-stage renal failure Kidney stones affect up to 5% of the population, with a lifetime risk of passing a kidney stone of about 8-10% Increased incidence of kidney stones in the industrial-used world is associated with increase standards of living and is strongly associated with race or ethnicity and region of residence

fig no .1 tridex procumben

KIDNEY STONE :

Kidney stones are mostly found in the kidney. And it's the most serious urinary tract infection. Preventing the recurrence of renal stone remains a serious human health problem. Preventing the kidney stone recurrence requires a better understanding of the mechanisms involved in the process formation of stone. Kidney stones were associated with an increased risk of chronic renal diseases, renal failure at the end of the stage, cardiac disease, diabetes and hypertension

Lifetime risk of passing a kidney stone of about 8-10% Increased incidence of kidney stones in the industrial- Used world is related with change standards of living and is strongly related with race or ethnicity and region of residence. A seasonal variation is also seen. With high urinary calcium oxalate saturation in women during early winter and in men during summer. Stones form in double as often in men as women. The from age of men has maximum 30 year and in women have a bimodal age distribution, in women with from age at 35 and 55 years once a kidney stone forms, the chances that a second stone will form within five to seven years is approximately 50% Searched Medline to identify recent articles (1990-2003) related to the evaluation and management of kidney stones. Key words used included kidney stones, urinary tract stone, urolithiasis, urinary calculi, and nephrolithiasis.

Types of Kidney Stones:

1. Calcium Stones: Calcium Oxalate

Calcium stones are predominant renal stones comprising about 80% of all urinary calculi, Calcium oxalates stone are crystalline component of calcium oxalate monohydrate, calcium oxalate dihydrate and calcium oxalate trihydrate.

2. Calcium Phosphate

Calcium phosphate stone includes crystalline components such as hydroxyapatite, calcium hydrogen phosphate dihydrate, rare calcium phosphate shape, tricalcium phosphate, ammonium magnesium, phosphate hexahydrate, ammonium magnesium, phosphate monohydrate, magnesium hydrogen, phosphate trihydrate, apatite carbonate and octacalcium phosphate. There are calcium oxalate stones and calcium phosphate rocks. In urinary system like hyperoxoloure , hypercalciuria, hypomagnesuria, hyperuricosuria, and Hypocitraturia.

3. Uric Acid Stones or Urate

Uric acid stone is a crystalline component of uric acid anhydrous and uric acid dehydrate, with uric acid stone usually affecting 5-10% of the analyzed population of renal stone.

4. Cysteine stone:

cysteine stone is caused by cystine in the urine due to high levels of essential amino acid. cysteine stone usually occur s in childhood and is a rare hereditary metabolic disorder that affects 1-3% of the studied kidney stone population.

5. Endocytosis of CaOx Crystals:

Endocytosis or crystal swallowing by renal tubular cells is the premature process in the formation of kidney stone.

6. Cell Injury and Apoptosis:

Exposure to high oxalate or CaOx crystals contributes to epithelial cell damage, which is a predisposing factor for the subsequent formation of stone.

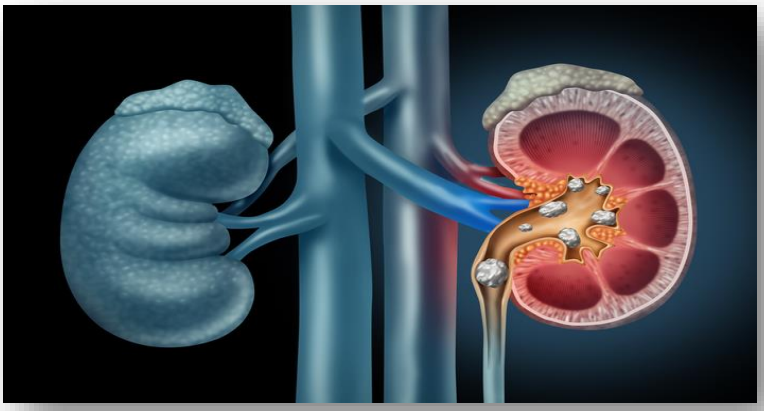

fig no 2. kidney stone

❖ CHEMICAL CONSTITUENT :

The ethyl acetate soluble part of hexane extract yielded a new bithiophene named tri-hishithiophene along with four terpenoids traxasteryl acetate, beta wyrone, lupeol and oleanolic acid (Ali and Jahangir, 2002). A new flavonoid (Procumbenetin) isolated from arial part of 7 procumbens has been characterized as 1, D-dimethoxy-5, 7, 2, 3, 4-ptahydroxy flavones, 7- D-beta-3-glucopyranoside (Ali and Ramachandram, 2001) Bight new compounds, is lined from Tridex procumbens, have been characterized as methyl 14 octailecanoate, methyl 14-oxmonacosaoute, -methylnonadecylbenzine, heptacosanyl cyclohexane prylate, 1(2,2-dimethyl-3-hydroxypropyl)-7-ischstyl phthalate, 12-hydroxytetracesan-1 Sane, procumbens contains flavone glycosides, chronome glycosides, sterols and polysaccharides with a Ben- 16-D-galactin main Chan Unsaponifiable fraction of petroleum ether fraction revealed the presence of campestral, stigma sterol.

❖ PHARMACOLOGICAL ACTIVITY:

Tridax procumbens having different therapeutic activities like antimicrobial activity, anti-oxidant, antibiotic efficacies, wound healing activity, insecticidal, anti-inflammatory activity, diarrhea and dysentery. Leaf juice is used to cure fresh wounds, to stop bleeding, as a hair tonic, in treatment of kidney stone.

❖ CHEMICAL TEST:

Test for alkaloids:

1 ml tridex procumben was treated with a few drops of Mayer's reagent. White-yellowish precipitate produced immediately in the solution which indicated the presence of alkaloids. Alkaloids are precipitated from slightly or neutral acidic solution of Mayer's reagent. Mayer's reagent: - $HgCl_2$ (1.36 g) was dissolved in 60 ml distilled water and mixed with a solution of 5 g of Kl in 10 ml water. As this reagent reacts only with the salts of the alkaloids, the solution made distinctly acidic with HCI or H2SO4

2. Wagner's test: In Wagner's test the Alkaloids gave brown flocculent precipitate with wagers reagent. Wagner's reagent: 1.27 g of iodine and 2 g of Kl were dissolved in 5 ml of distilled water and the solution was made up to 100 ml with distilled water.

3 Saponins:
Saponins are steroidal glycosides that contain medicinal and medicinal properties and have been detected in T. procumbens, specifically a steroidal saponin and PB- Sitosterol-3-0-B-D-xylopyranoside in the flowers of the species.

Test for saponins (foam test):

1 ml of the extract of tridex procumben was added to 2 ml of purified water and shaken for small amount of minutes in a test tube. 1 cm layer of foam for in 10 minutes indicates the presence of saponins in tridex procumben.
Shaken an aqueous/ alcoholic plant extract of tridex procumben in a test tube and a persistent foam indicates the presence of Saponins.

❖ USE :

1. This plant is use for medicinal purposes many years back to the Middle Paleolithic age, about 60,000 years ago.
2. T.procumbens is present allover the world and it has been used in the treatment of anemia, colds, inflammation, and hepatopathies.
3. In Central America in Guatemala, T. procumbens is worn in the treatment of antibacterial, antifungal, and antiviral treatment.
4. It is used in the treatment of vaginitis, stomach pain, diarrhea, mucosal inflammations, and skin infections.
5. The leaf juice of tridex procumben is used to treat wounds healings and stop bleeding. A study carried out in Chiquimula, Guatemala, showed that lactating pregnant women suffering from anemia could decrease their symptoms by using Tridax.
6. This species is also used in the treatment of respiratory and gastrointestinal infections. high blood pressure, and diabetes. In Guatemala, the entire plant is used for the treatment of protozoal infections, and also including in the treatment of malaria.
7. Tridax procumbens has been extensively used in the Ayurvedic system of medication and is well-accepted medicine for a liver disorder. It's been construct to possess significant medicinal properties against diarrhea malaria; dysentery, hair fall, bronchial catarrh, blood pressure, stomach ache, headache.
8. Tridex procumben plant it also has wound healing properties and check hemorrhage from bruises and cuts. In the flower and leaves the Antiseptic, insecticidal and parasiticidal properties were reported .
9. The plant also possesses antidiabetic, immunomodulatory, anti-hepatotoxic and analgesic activity, anti-oxidant, anti-inflammatory.

❖ MECHANISM OF ACTION :

The effect leaf of tridex procumben extract on crystal growth has reduced. The final effect of crystal aggregation reiterates the fact that the plant extract of tridex procumben could readily hold back crystal formation, which clearly shows the antilithiatic activity of the plant Tridax procumbens.
Stone formation is a multiplex process containing the crystal nucleation, and the secondary nucleation, fixation within the kidney, and more aggregation and secondary nucleation.

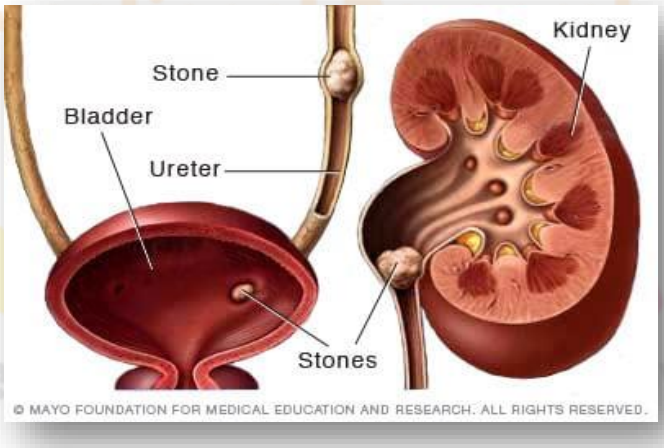

fig no 3. kidney stone

❖ DOSING :

Take 20-25 leafs of tridex procumben and wash it clearly then take its extract about half cup of tea and take it orally about 5 -8 days.

❖ CONCLUSION :

Tridax procumben is most widely worn in herbal medicine in India and has stood the test of centuries for the treatment of different ailments. This review therefore puts light on the importance and need to continuously carry out research on

this plant that are used against various ailments traditionally and thus makes a way towards the discovery of newer conventional medicines. Thidax procumbers has a huge variety of phytochemicals in it, and various extracts have been used experimentally against variety of ailments in several in vivo and in vitro studies. It is play vital role in treatment of kidney stone . The health care system now adays going to become more and more expensive therefore we have to establish herbal medicine system in our health care.

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