



To study the action of *Basella alba* ethanolic extract on Calcium Oxalate in vitro.

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Abstract: *Basella alba* plant is used for the treatment of the diseases as well as different healing activities of human beings. *Basella alba* is cool season vegetable and widely cultivated. It is also called as Malabar Climbing, Puli Shak. Fresh leaves are commonly chewed for treatment of Kidney stone treatment around this area. The aim of study was to evaluate role of *B. alba* extraction on dissolving capacity of calcium oxalate crystals. Leaves extracts shows admirable dissolving capacity of crystals in vitro.

Keywords- *Basella alba*, Calcium oxalate, calculi / kidney stone

Introduction

Basella alba is cool season vegetable with climbing growth habit. It is a succulent, branched, smooth several meters in length. Leaves are fleshy; leaves and stem are used for medicinal purpose (1).

Pharmacological properties –

Anti-inflammatory (2), anti-fungal, analgesic.

Chemical composition-

Leaves contain –protein, fats, vitamin A, vitamin C, vitamin E, vitamin K, Folic acid, riboflavin, niacin, thiamin.

Taxonomy

Kingdom: Plantae

Phylum : Magnoliophyta

Class : Mangoliopsidia

Order : Caryophyllales

Family : Basellaceae

Genus : Basella

Species : alba

Vernacular names-

English - ceylon spinach

Hindi -lalbachlu

Bengali-Puishak

Telgu -Bachhali

Marathi –mayalu

Sanskrit- Upodika

Most of renal calculi are composed of some organic compounds like proteins and impregnated with inorganic salts .The most important ones are calcium salts as they make the calculi (strong) hard and difficult to dislodge and move .Amongst all calcium salts calcium oxalate crystals / deposits are 75 %.

If the deposition of calcium oxalate is prevented or already deposited salts are easily removed /washed , the calculi can become brittle and easily expelled out.

Hence the study was conducted with following aims and objectives

Aim

To study the effect of ethanolic extract of Basella alba on laboratory created calcium oxalate crystals.

OBJECTIVES

1)To study solubility effect of hydro-alcoholic extract of Basella alba on laboratory created calcium monohydrate and calcium dehydrate crystals.

2)To study solubility effect of hydro alcoholic extract of Basella alba on laboratory crated calcium oxalate crystals pH adjusted.

3)To study the recovery of calcium oxalate from the solution produced by action of hydro alcoholic extract of basella alba on laboratory created calcium oxalate crystals .

MATERIAL AND METHOD

Preparation of calcium oxalate crystals-

Oxalic acid and lime water heated at constant temperature 40⁰c , cooled overnight and calcium oxalate crystals were collected dried over filter paper,

Preparation of extract-

Fresh leaves were collected , identified and authenticated, washed and dried in shade, Soxhlet extractor was used for extraction using ethanol as a solvent ,six cycles were given and the extract was collected and stored in amber color glass bottle for further use.

Method-

500mg weight of calcium oxalate was taken for study purpose in Petri dish

Dilution in ratio 1:10,1:100,1:1000 of the extract were prepared and then added to

Calcium oxalate crystals in Petri dish.

Five groups-

Group A –Extract

Group B- Alkalizer (cital)

Group C –Extract + Alkalizer (equal parts)

Group D – Solvent (ethanol)

GROUP	A	B	C	D
1:10	500mg	500mg	500mg	500mg

1:100	500mg	500mg	500mg	500mg
1:1000	500mg	500mg	500mg	500mg

Solubility

GROUP	A	B	C	D
1:10	17 min	18min	25min	20min
1:100	13min	17min	26min	18min
1:1000	12min	17min	27min	18min

POST EVAPORATION -at room temperature

GROUP	A	B	C	D
1:10	194mg	194mg	194mg	450mg
1:100	90mg	118mg	176mg	375mg
1:1000	235mg	176mg	211mg	332mg

Result –pre and post evaporation weight shows difference ,1:100 dilution of extract shows 90 mg weight while cital solution 1:100 shows 118mg post evaporation weight. Thus we conclude that Basella alba in diluted form has action on calcium oxalate crystals which may be helpful in treatment of calcium oxalate stones .Further study in vivo is necessary .

For this we can conclude that Basella alba may reduce the size of stone and may help in eliminating the stone /calculi from the urinary tract.

REFERNCE

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