



Antacid Potential of *Corchorus depressus* Linn

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Abstract

Leaves of plant *Corchorus depressus* L. are reported to possess good medicinal values in traditional system of medicine. The present investigation deals with preliminary phytochemical investigation of leaves and root of *Corchorus depressus* L. which includes pharmacological significance as antacid. This in vitro study is done by simple maceration procedure, water use as solvent in it. Root of plant *Corchorus depressus* L. are reported to possess good medicinal values in traditional system of medicine. The present investigation deals with preliminary phytochemical investigation of leaves of *Corchorus depressus* L. which includes physicochemical parameters like ash values, Extractive values and moisture content. The total ash, acid insoluble ash, water soluble ash values and sulphated ash were observed to be 5.40%, 2.96%, 1.85%, 0.65% respectively. Alcohol soluble and water soluble extractive values of leaves were observed to be 2.90%, 5.54% respectively. Phytochemical investigation of n-hexane, chloroform, ethanol and water extract revealed the presence of glycosides, tannins, terpenoids, steroids, carbohydrates, alkaloids, saponins and proteins. The main aim of present investigation is to study the pharmacognostic characters and phytochemical standard of leaves of *Corchorus depressus* L. which could be used to prepare a monograph for the proper identification of plant.

Keywords: *Corchorus depressus* L., Phytochemical analysis, Antacid

1. Introduction

Corchorus depressus L Commonly known as "Hirankhuri" woody 6 to 9 inches in length. It is distributed in Central and North West India and Pakistan to North and tropical Africa Cape Verde Island. It is a wild species commonly growing in sandy, clayey, saline or gravelly areas from sea level to 1000 meters in arid and semi-arid region throughout Pakistan. It has been used in folk medicine in the subcontinent. The herbalists and ayurvedic doctors sell it under the name "Mundari". I leaves are used as an emollient and cooling agent/ the musilage is used for the treatment of gonorrhoea and applied as a poultice for healing wounds.

The genus *Corchorus* is belonging to "Tiliaceae" family & comprises certain herbs and under shrubs.it contain about 100 species which are distributed in tropics and subtropical, chiefly south East Asia and South America (Ali S.I 1974 chopra R.N 1956).

Chemical investigation of this plant has resulted in isolation of flavonoids, quercetin (1) and kaempferol (2) from the leaves and flowers [Harsh M.L *et al*, 1988. From the whole plant of *C. depressus* L in addition to apigenin (3) luteolin (4), β -sitosterol (5), β -sitosterol glycosides (6), three α -amyrin derivatives, chourdeprsic acid (7), chiropractic acid.

Material and Methods

Plant Material Collection and Authentication: The leaves of plant *Corchorus depressus* L. were collected from village Erandol (Padmalaya) in Jalgaon district (M.S.). The specimens of plants were authenticated by D.A Patil, Department of Botany, S.S.V.P.S's L. Science College, and Dhule (M.S.). The dried uniform root powder was used for the maceration and separation of constituents of the plant, determination of in-vitro antacid investigation. Roots are used as a tonic, bitter, demulcent, carminative, laxative,

refrigerant, febrifuge, useful in gonorrhoea, chronic cystitis, general weakness, diabetes, treachery troubles, antipyretic, cure piles and improved sexual vigor have been reported.

Dried parts of *Corchorus depressus* L.(root) were used for pharmacognostical evaluation *Corchorus depressus* of about 40-100 species of flowering plants in the family Tiliaceae native to tropical and subtropical regions throughout the world. Different names are used in different contexts, with jute applying the fiber produced from the plant, for the root used as a vegetable. Description The plant are small, usually annual herbs, with only a few branches. The root are alternate, simple, lanceolate, 5-15 cm long, with an acuminate tip and a finely serrated or lobed margin. The flowers are small (2-3 cm diameter) and yellow. It thrives almost anywhere, and can be grown year-round.

Maceration procedure

Maceration procedure utilizes a variety of solvents to extract chemical constituents and fragrances from plant material. Traditional maceration procedures require whole or ground plant material to soak in a water, based solvent, inside a sealed glass container, at room temperature (12 hr). Hundreds of plant species contain useful extractable chemical constituent, which may be used in peptic ulcer & reduce acidity.

Drug

Synonym: Hirankhuri

Biological Source: It consists root of plant *Corchorus depressus* L. belonging to Family-Tiliaceae

Geographical Source

Corchorus depressus commonly called as **Hirankhuri** is an annual herb found in throughout India (Maharashtra) and Pakistan also many tropical countries.

Macroscopic

COLOUR: Green, yellowish root

ODUOR: Odorless

TASTE: Characteristic

Chemical Constituents

It content carbohydrate, protein, cellulose, also content triterpenes:

- Chorchono cid A
- Chorchono cid B
- Triterpenes;
- β -Amyrins; Cordepressin acid
- Cordepressenic acid;
- Cordepressin

In vitro antacid model

Introduction

ANC can be defined as "Number of mille-equivalents of HCL required to maintain 1 ml of an antacid suspension at pH 3 for two hours in-vitro. The rate of neutralization varies according to the degree of comminution, crystal form, precipitants used and presence of reactive suspending agents. Consequently, the ANC and rate of neutralization of various antacid varies enormously. Standardization of pH meter: Standardize pH meter using 0.05 M Potassium bi phthalate and 0.05 M Potassium tetra oxalate buffers

Method I

Procedure

- Dissolve accurately weighed extract in 10 ml distilled water
- Record initial pH of solution
- Add 1M HCL, maintain pH to 3
- Monitor pH for two hours
- Add more HCL to maintain pH 3(if required)
- Record the final volume of HCL required.

Method II

Procedure

- Weigh 0.5 gm of extract and transfer to 250 ml beaker.
- Transfer 70 ml of distilled water in to beaker.
- Stir this solution for 1 min with magnetic Stirrer.
- Add 30 ml of 1 M HCL to above solution and Stir with magnetic Stirrer for 15 min
- Titrate excess of HCL with 0.5M NaOH to attain stable pH of 3.5 (for 10-15 sec)
- Calculate mEq of HCL required with formula

Calculation for sodium bicarbonate

- Total m Eq (ANC) = $[30 \times N \text{ HCL}] - [V \text{ NaOH} \times N \text{ NaOH}]$
- = $[30 \times 0.5] - [5.9 \times 0.5]$
- = $[15] - [2.95]$
- = 12.05
- N HCL = Normality of HCL = 0.5
- V NaOH = volume of NaOH = 5.9
- N NaOH = Normality of NaOH = 0.5

Calculation for drug (*Corchorus depressus* L.)

- Total m Eq (ANC) = $[30 \times N \text{ HCL}] - [V \text{ NaOH} \times N \text{ NaOH}]$

- = $[30 \times 0.5] - [19.2 \times 0.5]$
- = $[15] - [9.6]$
- = 5.4
- N HCL = Normality of HCL = 0.5
- V NaOH = volume of NaOH = 19.2
- N NaOH = Normality of NaOH = 0.5

Results

It has shown antacid activity.

Table: xxxx

Sr. No	Particulars	Qt. required NaOH
1	To Neutralize NaHCO_3	5.9 ml
2	To Neutralize <i>Corchorus depressus</i> L.	19.5 ml

Total m Eq (ANC) of NAHCO_3 = 12.05

Total m Eq (ANC) of *C. depressus* = 5.4

So,

The above result & data shows 44.81% antacid activity of drug

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Conclusion

Corchorus depressus L. is used as ethnomedicinal plant significantly show natural antacid activity.

Discussion

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