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A Review on Herbal suppository in treatment of hemorrhoids in piles

Abhishek R. Dhanwate*, Prashik L. Adhangle, Rushikesh D. Gavali, Ruchita R. Nagpure, Smita P. Mali

Abstract:

Cissus quadrangularis is a widespread perennial climber found across India, particularly in tropical regions. It belongs to the Vitaceae family. The plant's biological effects include anti-osteoporotic, antioxidant, analgesic, antimicrobial, anti-obesity, anti-ulcer, adrogenic, anti-hemorrhoidal, anti-diabetic, antifungal, anti-tumor, and bone-healing qualities. The plant contains flavonoids, tannins, alkaloids, steroids, and saponins. For the manufacture of the soxhlet apparatus extract, powdered material from Cissus quadrangularis was utilized. Glycosides, steroids, alkaloids, tannins, flavonoids, and saponins were among the many phytochemical assays performed. Because of its medicinal benefits, herbal treatment is presently employed extensively. The potential therapeutic benefits and quality compliance of herbal combinations have been the subject of numerous recent studies. In light of these facts, the current research focuses on creating and assessing herbal medicine, which has gained recognition on a global scale due to its therapeutic advantages. Numerous research have recently examined the possible therapeutic advantages and quality compliance of herbal mixtures. The current work focuses on creating and evaluating a topical formulation of Cissus quadrangularis considering these facts. The dispersion method, which entailed altering the ratio of ingredients, was used to make the formulation. [1]

Keywords: Cissus Quadrangularis, Suppository, Rectum, Hemorrhoid

Introduction:

The rectum and anus's venous dilatation are the source of hemorrhoids, an anorectal illness. Bleeding during or after bowel movements is one of the clinical signs of hemorrhoids that are frequently observed in the early stages. Anus pain, itching, and prolapse can occasionally be observed. In Bangkok, the monks under investigation had a 4% frequency of hemorrhoids [2]. In South Korea, 14.4% of adults experience symptoms associated with hemorrhoids. Currently, doctors typically recommend traditional drugs to treat hemorrhoidal problems. Due to its anti-inflammatory and vasoconstrictive properties, Cissus quadrangularis Linn. (CQ) has long been used to treat hemorrhoids in Thai traditional medicine. Furthermore, CQ also has analgesic properties. According to the safety profile, there are no significant adverse pharmacological events associated with CQ. As a result, it can be taken orally and is listed among the Thai National List of Herbal Products. Quadrangularis Cissus One of the most widely utilized medicinal plants in Thailand is linn, a climber belonging to the Vitaceae family that grows all around the nation [3]. Fresh stems and leaves of C. quadrangularis are used to cure scurvy, menstrual disorders, hemorrhoids, and to prevent flatulence. It is used to treat a variety of illnesses in India. The antibacterial and antioxidant properties of the C. quadrangularis extract were documented in pharmacological investigations, which also demonstrated the plant's ability to cure bone fractures and its antiosteoporosis action. Two 500 mg dry powder capsules taken twice daily were found to be highly helpful in treating hemorrhoidal discomfort and inflammation as well as in lowering the size of hemorrhoids in a clinical trial of C. quadrangularis in hemorrhoid patients. It made sense to investigate the previously unreported activities of C. quadrangularis since the flavonoid combination of 90% diosmin and 10% hesperidin, which is used clinically to treat hemorrhoids, was shown to have venotonic, analgesic, and anti-inflammatory properties [4].

Suppository:

A suppository is a solid drug dosage form that is placed into a bodily hole, such as the vagina or rectum, where it dissolves or melts to have a local or systemic impact [4]. Laxatives and antifungal suppositories are frequently used to treat constipation and vaginal infections, respectively. They are used when a patient is unable to swallow or when a medication cannot be given orally because of the possibility that it will be broken down in the digestive tract [5].

Types Of Suppositories:

1. Rectal Suppositories
2. Vaginal Suppositories
3. Urethral Suppositories
4. Ear Cones [6]

Fig: Suppository

Ideal Properties of Suppository Base:

- It must be non-reactive and non-irritating.
- It should dissolve at room temperatures.
- It needs to stay in the right size and shape.
- Under storage circumstances, it should be stable.
- It should shrink enough to get rid of the mold.
- It shouldn't obstruct the release or absorption of the medication [7].

Advantages of Suppository:

- For individuals who are unable to take oral medication, it is simple to utilize.
- Boost the medications' bioavailability.
- Very useful for obtaining local effects.
- The first-pass metabolism is bypassed.
- It offers quick action.
- Ideal for fungal infections of the rectum and vagina.

Dis-advantages of Suppository:

- Some patients may become irritated by it.
- Some patients experience embarrassment.
- Compared to liquid and tablets, preparation is more difficult.
- Low storage temperatures are required.
- This kind of dosage form can deliver very little medicines [8].

Cissus Quadrangularis:

Fig.: Cissus Quadrangularis [9]

Taxonomy of Cissus Quadrangularis [10]:

- **Kingdom:** Plantae
- **Subkingdom:** Tracheobionta
- **Super division:** spermatophyta
- **Division:** Magnoliophyta
- **Class:** Magnoliopsida
- **Subclass:** Rosidae
- **Order:** Vitales
- **Family:** Vitaceae
- **Genus:** Cissus Species

History Of Cissus Quadrangularis:

Asia and Africa are habitat to the succulent vine Cissus quadrangularis [11]. In Thailand, it is among the most widely utilized medicinal plants. Both Ayurveda and African medicine have long employed it. The plant is utilized medicinally in all its components. Cissus quadrangularis is a traditional medicine that is typically attributed to Ayurveda, although because it grows in many different places, it seems to have been utilized medicinally in many different places [12]. It was traditionally known as the "Bone Setter" (Hadjod) because it was primarily used to treat female disorders (menopause, libido, and menstrual disorders) and bone disorders (increasing bone mass or accelerating fracture healing rates) [13]. Other traditional uses include its alleged antiulcer, antihemorrhoid, pain-relieving, and wound-healing properties.

Traditional uses In Ayurveda:

- Asthiyuk - strengthens bones.
- Sara -induces mobility, causes diarrhea, purgation, relieves constipation
- Krumighna -Relieves worm infestation, useful in infected wounds
- Amaghna -Relieves ama – a product of indigestion and altered metabolism.
- Vrushya -aphrodisiac, improves vigor
- Pachana - Digestive, relieves Ama Dosha
- Pittala -Increases Pitta Dosha
- Obesity, gout, syphilis, veneral illnesses, leucorrhea, worm infestation, anorexia, diabetes, peptic ulcers, hemorrhoids, and high cholesterol are among the conditions it is used to treat.
- It is also utilized as a supplement for bodybuilding. Its stem is utilized as a vegetable in the northeastern Indian regions. It is also utilized as a supplement for bodybuilding. Its stem is utilized as a vegetable in the northeastern Indian regions [14].

Extraction Process of Cissus Quadrangularis:

Soxhlet Extraction: The Soxhlet extraction method was used for extracting the stems of Cissus quadrangularis L. Dried powder of Cissus quadrangularis L. stems (50 g) was placed in the thimble of a Soxhlet apparatus. A total of 350 ml of various solvents—methanol, acetone, chloroform, dichloromethane, hexane, and aqueous (MACDHA)—were used sequentially. The solvents dissolved the active biomolecules, while the stems remained precipitated. Extraction continued until the solvent in the thimble was clear, which typically took around 8 hours. Afterward, the extract was dried in a water bath until a dark orange residue was obtained.

Materials and Methods:

Sr. No.	Ingredients	Action
1	Cissus Quadrangularis	Anti-inflammatory
2	Kaempferol	Anti-inflammatory
3	Quercetin	Stops Bleeding
4	Steroid	Reduce Inflammation, itching
5	Glycerin	Retains moisture
6	Gelation	Provide structure and firmness
7	Distilled Water	Vehicle

Method of preparation:

- Fusion
- Hand Rolling
- Compression

Calibration of Moulds:

The capacity of the molds may vary; thus, it is important to calibrate them before making the suppositories. After the suppositories were removed, the base was melted alone, put into the mold, and weighed. The mean weight was used to determine the mold's actual capacity.

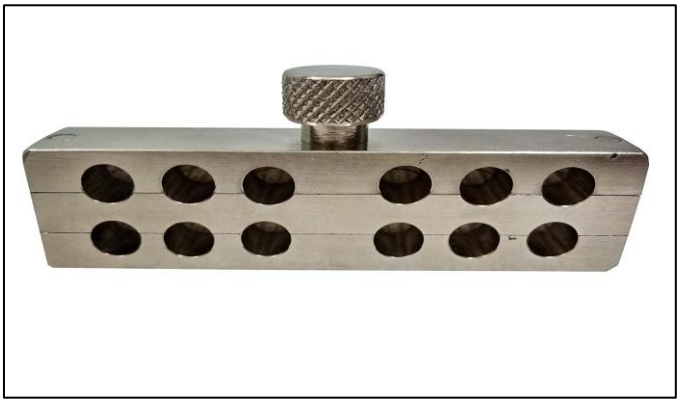

Fig: Mould

Method:

Collection of herbal materials

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Preparation of suppository Base

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Molding and Solidification Process

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Evaluation of Physical Parameters

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Stability Testing.

Evaluation Parameters:

1. **Uniformity of weight:**

- Weigh 20 suppositories individually
- Determine their average weight.
- Individual weights shouldn't differ from the average by more than 5% in more than two cases, and none should differ by more than 10% [15].

2. **Content Uniformity Test:**

- Determine the active components in each of the ten suppositories using an appropriate analytical technique.
- If none of the individual values so obtained are outside the limit, which is 25% of the average value, and at least one of them is outside the limit, which is a percentage of the average value.

3. **Melting Point Determination Test**

- Melt the suppositories quickly at a temperature no higher than 100 degrees Celsius above the point of total fusion. Then, put one end of a glass capillary tube into the melted material so that a column of material rises to a height of 8 to 12.
- After cooling the tube to 150°C, keep the temperature between 15 and 170°C for at least 16 hours. The tube was attached to the thermometer in the heating vessel with water at 150 degrees Celsius so that the bottom of the substance column was 30 millimeters below the water's surface. Heat the water while stirring constantly until the temperature rises by 20 degrees Celsius per minute.
- The melting point is defined as the temperature at which partially melted material starts to rise in the tube. Suppositories should not have a melting point higher than specified in the monograph [16].

4. **General Appearance:**

- When the suppository is cut longitudinally and examined with the unaided eye, its inside and external surfaces should appear the same.
- Adherence to the criteria signifies adequate dispersion and subdivision of suspended particles.
- To evaluate the lack of fissuring, pitting, exudation, and movement of the active ingredients, surface appearance and color can often be confirmed.

Conclusion:

The conclusion demonstrated that hemorrhoid symptoms were alleviated with suppositories. Therefore, it is advised that individuals with piles take Cissus quadrangularis rectal suppositories. and suppress the microorganisms that cause the rectum's bacterial illness.

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