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Herbal Topical Gel for Treatment of Herpes zoster (HZ)



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ABSTRACT

Herpes zoster (HZ) is a viral infection which is having after effect after 2-3 days of infection after treatment. In the present study the idea that natural medicines are safer and have fewer negative effects than synthetic ones make them more acceptable. By knowing the medicinal benefits of Couroupita guianensis its extraction may be formulated as topical gel and duration of medication will be lesser when it compares to other medications. As such now, dosage forms available for Herpes zoster are in the form of tablets and ointments having duration approximately 7 -8 days of medication which can be minimized by using advance techniques in future aspects.



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INTRODUCTION

Herpes zoster (HZ) also called as shingles it's a viral infection that occurs with reactivation of the varicella zoster virus. The rash associated with HZ has a brief erythematous and macular phase, which is often missed, after which papules rapidly appear. These papules develop into vesicles within 1–2 days, and vesicles continue to appear for 3–4 days. At this point, eosins of all types may be present .The lesions tend to be grouped, and clusters are often seen where there are branches of the cutaneous sensory nerve (e.g., in parasternal, mid-axillary, and paraspinal areas, representing the anterior and lateral branches of the anterior primary division as well as the posterior division of a thoracic nerve).¹

People who have had chickenpox who are more likely to develop shingles include those:

- With a compromised immune system (such as people with cancer, HIV, organ transplant recipients or those receiving chemotherapy). Over the age of 50.
- Have been ill.
- Have experienced trauma.

Early symptoms of shingles may include:

- Fever.
- Chills.
- Headache.
- Feeling tired.
- Sensitivity to light.
- Stomach upset.

GENERAL TREATMENT: The drugs may ease the discomfort and make the symptoms stop sooner, particularly if you start them within 72 hours of the first sign of shingles. They may also help prevent the pain that can happen months and years later, called post-herpetic. These medications include:

- Acyclovir (Zovirax®).
- Famciclovir (Famvir®).
- Valacyclovir (Valtrex®)

These medications include the following and may be effective in relieving pain:

- Acetaminophen (Tylenol®).
- Ibuprofen (Motrin®, Advil®).

Oral antiviral medications for herpes zoster.³

Medication	Dosage	Duration of treatment, days	Most common adverse effects	Precautions and contraindications
Acyclovir	800 mg 5 times daily (every 4–5 h)	7–10	Nausea, headache	Dosage adjustment required for patients with renal sufficiency
Brivudina	125 mg once daily	7	Nausea, headache	Contraindicated for patients treated with 5-fluorouracil or other 5-fluoropyrimidines, because drug interaction is associated with severe and potentially fatal bone marrow suppression
Famciclovir	500 mg 3 times daily (approved dosage in United States; in some other countries, 250 mg 3 times daily is approved)	7	Nausea, headache	Dosage adjustment is required for patients with renal insufficiency
Valacyclovir	1000 mg 3 times daily	7	Nausea, headache	Idiosyncratic thrombocytopenic purpura/hemolytic uremic syndrome was reported at dosages of 8000 mg daily in immunocompromised patients

Corticosteroid and analgesic medications that can be considered for treatment of patients with herpes zoster.

- Opioid analgesics (dosage as oxycodone), Tramadol, Gabapentin, Tricyclic antidepressants
- Start from lower dose in the beginning and tapering in end
- Common side effect: Nausea/vomiting, constipation, sedation, dizziness.

Other medications

Antibacterial drugs may be prescribed if you develop a bacterial infection due to the shingles rash. Anti-inflammatory drugs like prednisone may be prescribed if shingles affect your eyes or other parts of your face.³

Herbal medication: Some of these remedies may relieve pain and itchiness and improve healing:

1. Essential oil
2. Cold compression
3. Cold bath
4. Vitamin supplement
5. Quit smoke
6. Reduce smoke
7. Diet
8. Gentiana scabra

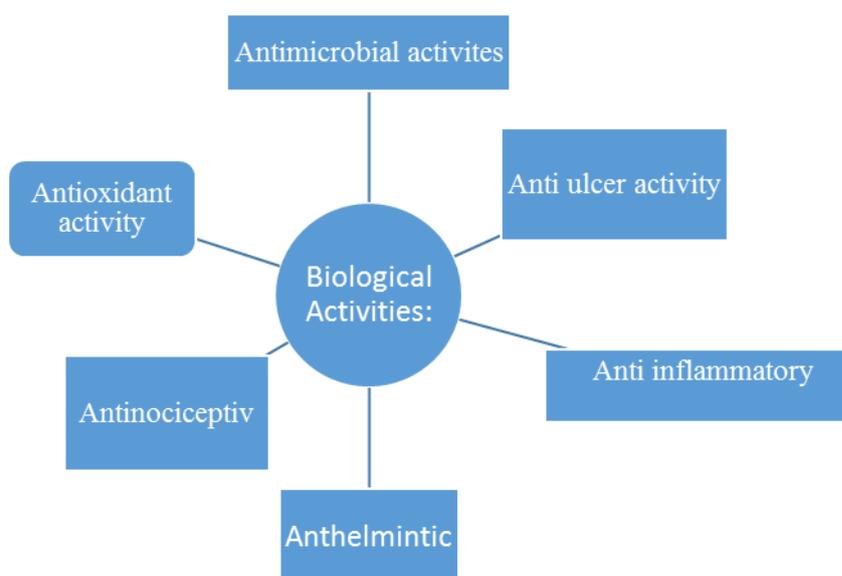
Nagalinga Pushpa:

From old ayurvedic medicine practices “Nagalinga Pushpa” is also used to treat Herpes zoster (HZ) it’s also known as *Couroupita guianensis* Aubl.

Belong to family Lecythidaceae and commonly known as cannonball tree, locally known as „Kailashpati“.

It is distributed throughout India as an ornamental tree and its native to Central and South America (Brazil, Colombia, French, Guyana, Peru and Venezuela), where it grows in the thick humid forests, often along the river belts and low altitudes.

In India, it is considered a sacred tree by Hindus which is the reason why it is generally grown in Lord Shiva temple because of its special featured flowers which look like hood of Naga (snake) protecting the Shivalinga, hence, it is called “Nagalinga Pushpa”.



Medicinal properties

- Kailashpatitree components have many various medicinal properties such as antibacterial and antifungal activities (Kavitha et al., 2011), exert of cytotoxic activity against certain cancer cell lines i.e „Isatin used in chemotherapeutic agents (Premanathan et al., 2012), decoction of the flower has been used to boost the immune system to fight a number of diseases in Orissa (Boyum, 1968)
- flower extracts of this plant had been screened for immune modulatory activity (Pradhan et al., 2009) and larvicidal activity against vector (Desalet et al., 2003), ,,
- flavonoids (extract from plants) have a wide range of uses due to its biochemical and pharmacological effects especially against pathogenic bacteria (Akther et al., 2017) and antibacterial activity of fruit pulp oil extracts was demonstrated against gram positive and gram negative bacteria.

- By medicinal properties of Nagalinga Pushpa plant extract can be formed Topical drug delivery techniques. Becoming more common and numerous medicines have been effectively administered this way for both local and systemic effects.
- Most antifungal, antibacterial, anti-inflammatory, and lubricating gels have been created in recent years to administer the medication in the form of topical gels or as lubricants for surgical equipment, which are known as non-medicated gels.
- Gels are used to reduce gastrointestinal discomfort, counteract the "first pass" effect, and increase medication concentration at the site of action. The major route of topical medication delivery is through the skin, which is one of the most widespread and easily accessible organs in the human body for topical administration.

PROPERTIES OF GEL

1. In a perfect world, a pharmaceutical or cosmetic gelling agent would be inert, safe, and not react with other ingredients in the formulation.
2. It should have adequate antimicrobial protection against microbial attack.
3. Gelling agents should produce a sensible solid-like nature at the time of storage which is easily broken when exposed to shear forces produced by squeezing the tube, trembling the bottle or at the application stage.
4. As the effective crosslink density of the gel increases, the apparent viscosity or gel strength increases. However, depending on the molecular interactions between the polymer and the solvent, a rise in temperature may increase or decrease apparent viscosity.
5. It should have thyrotrophic, greaseless, emollient, non-staining, and other properties.
6. It should be stable while in storage.
7. It should be simple to use and handle.
8. There should be no tackiness to the topical gel.
9. It should not have an impact on the drug's biological nature.
10. They exhibit the mechanical characteristics of the solid stage.
11. The ophthalmic gel has to be completely sterile.

12. The topical gel should not be abrasive.

Formulation:

Method of extraction⁷

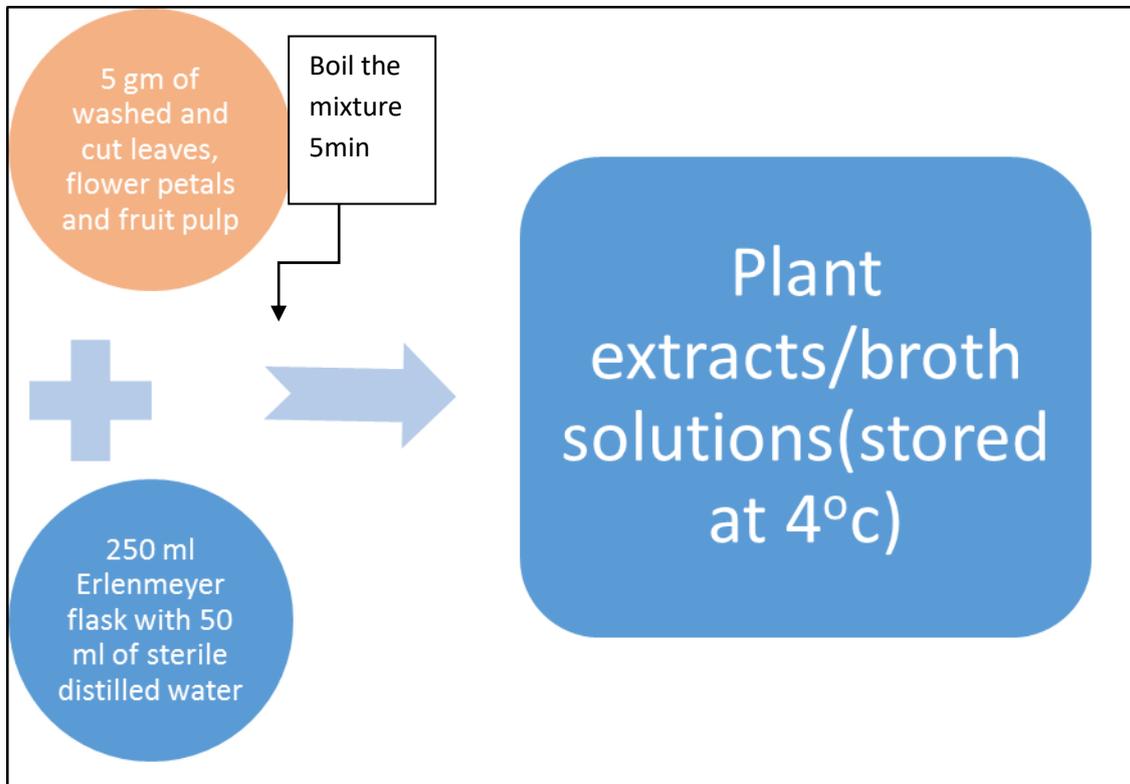


Fig 1: Extraction Process of Couropita guianensis

Gel preparation:

Preparation of gel with Carbopol 934	Preparation of gel with HPMC K 100 M	Preparation of gel with Xanthan gum
Accurately weighed Carbopol 934 (soak in distilled water) For half hour ↓ Add 5 ml of propylene glycol and the required quantity of Extract ↓ Take 5 ml propylene glycol in another beaker and add the weighed quantity of propyl paraben and methyl paraben + (upto 100ml) Triethanolamine (dropwise to adjust pH 6.8-9)	HPMC K 100 M (disperse in distilled water) ↓ 1 %w/v extract + 10 ml of propylene glycol(preservative) ↓ stirred well to get a uniform gel (up to 100 ml)	Soak Xanthan gum in distilled water (at 1200 rpm for 30 min) ↓ 1 %w/v extract + 10 ml of propylene glycol(preservative) ↓ stirred well to get a uniform gel (up to 100 ml)

CONCLUSION:

In the present study, the idea that natural medicines are safer and have fewer negative effects than synthetic ones makes them more acceptable. By knowing the medicinal benefits of *Couroupita guianensis* its extraction may be formulated as topical gel and the duration of medication will be lesser when compare to other medications. As such now, dosage forms available for harpies zoster are in the form of tablets and ointments having a duration of approximately 7 -8 days of medication which can be minimized by using advanced techniques in future aspects.

REFERENCES:

1. "Recommendations for the Management of Herpes Zoster" by Robert H. Dworkin, Robert F. Betts,31,2Robert W. Johnson, Anne A. Gershon,418Judith Breuer, Maija L. Haanpa`a",22 ,19John W. Gnann.
2. Grose C, Bonthius D, Afifi AK. Chickenpox and the geniculate gan-glion: facial nerve palsy, Ramsay Hunt syndrome and acyclovir treatment. *Pediatr Infect Dis J* 2002; 21:615–7.
3. Kavitha R, Kamalakannan P, Deepa T, Elamathi R, Sridhar S*Suresh Kumar J." In vitro Antimicrobial Activity and Phytochemical Analysis of Indian Medicinal Plant *Couroupitaguianensis* Aubl". 2011, 3(6):115-121
4. S.Manimegalai* and G.Rakkimuthu. "PHYTOCHEMICAL SCREENING OF STEM OF COUROUPITA GUIANENSIS. "IJPSR (2012), Vol. 3, Issue11

5. Ofner CM. et al. "Encyclopedia of Pharmaceutical Technology". Informa Healthcare (2007): 1875-1890.
6. Biological Activities and Medicinal Properties of *Couroupita guianensis*. S.K.Gousia , K. Ashok Kumar, T. Vinay Kumar and J. Naveena Lavanya Latha.
7. Cooper and Gunn. "Disperse systems. In Carter SJ, editor. Tutorial Pharmacy". CBS Publishers and Distributors (2000): 68-72
8. "PREPARATION AND EVALUATION OF HERBAL GEL FORMULATION" Mohsin J. Jamadar et al. / SGVU Journal of Pharmaceutical Research & Education, 2017, 1(2), 201-224.
9. Dixit G., Misal G., gulkari V., Upadhye K. Formulation and evaluation of polyherbal gelfor anti-inflammatory activity. IJPSR. 2013: 4(3): 1186-1191.
10. Pons R., Solans C., Stebe M., Erra P., Ravey JC 1992, Stability and Rheological properties of gel emulsions proper colloid polym sci. 89: 110-113.