



IJPPR

INTERNATIONAL JOURNAL OF PHARMACY & PHARMACEUTICAL RESEARCH
An official Publication of Human Journals

ISSN 2349-7203



Human Journals

Review Article

July 2023 Vol.:27, Issue:4

© All rights are reserved by Nithishkumar.G et al.

Design, Development and Standardization of Novel Polyherbal Syrup against Skin Cancer



IJPPR
INTERNATIONAL JOURNAL OF PHARMACY & PHARMACEUTICAL RESEARCH
An official Publication of Human Journals



ISSN 2349-7203

**Nithishkumar.G*, Guhan.R, Indumathy. K,
Senniappan.P, Pavithra.P**

*Shri Venkateshwara College of Pharmacy. Ariyur,
Puducherry, India.*

Submitted: 23 June 2023
Accepted: 12 July 2023
Published: 30 July 2023

Keywords: Skin cancer, Zingiber officinale, UV-light, *Artemisia vulgaris*

ABSTRACT

Skin cancer can be of 2 types mainly. They are malignant melanoma and non-malignant melanoma. Skin cancer mainly occurs due to exposure to sunlight. Ozone depletion and chemical exposures are other factors involved in precipitating skin cancer. Mutations of p53 gene are involved in UV-induced carcinogenesis. The P53 gene acts vital in development of SCC. So, the prevention of skin cancer is the main criterion. Regular application of sunscreens could be one of the primary prevention. Traditional practioners prescribe the whole plants of *Zingiber officinale* (Zingiberaceae) and *Artemisia vulgaris* (Asteraceae) for the treatment of skin cancer. It provides the scientific validation for the traditional uses of the herbal plants and the formulated novel polyherbal syrup might be an effective therapy for the management of skin cancer



HUMAN JOURNALS

ijppr.humanjournals.com

INTRODUCTION

Skin

The skin is an organ that separates human body and environment. It acts as a barrier that protects body against UV-radiation, toxic substances, infections. Epidermis is the outermost layer of skin. Keratinocytes, dendritic melanocytes, Merkel and Langerhans cells are different type of cells present in epidermis. The underlying dermis contains connective tissue with antigen presenting dermal dendritition.

Skin

The skin is an organ that separates human body and environment. It acts as a barrier that protects body again of skin cancers are BCC, 16 % are SCC and 4 % are of skin cancers are BCC, 16 % are SCC and 4 %.

SKIN

The skin is an organ that separates human body and the environment .it acts as a barrier that protects the body against UV radiation, toxic substance, infection. Epidermis is the outermost layer of skin. Keratinocytes in the melanocytes, Merkel and Langerhans cell are different types of all present in epidermis. The underlying dermis contains connective tissues with antigen-presenting dermal dendritic cells, mast cells and memory tests.

SKIN CANCER

Skin cancer is a disease that involves the growth of abnormal cells in your skin tissues. Normally, as skin cells grow old and die, new cells form to replace them. When this process doesn't work as it should like after exposure to ultraviolet (UV) light from the sun — cells grow more quickly. These cells may be noncancerous (benign), which don't spread or cause harm. Or they may be cancerous¹.

Skin cancer can spread to nearby tissue or other areas in your body if it's not caught early. Fortunately, if skin cancer is identified and treated in early stages, most are cured. So, it's important to talk with your healthcare provider if you think you have any signs of skin cancer.



Fig.1 SKIN CANCER

TYPES OF SKIN CANCER ⁽¹⁾

Basal cell carcinoma (BCC)

this is the most common type of skin cancer.

- BCC frequently develops in people who have fair skin. People who have skin of color also get this skin cancer.
- BCCs often look like a flesh-colored round growth, pearl-like bump, or a pinkish patch of skin.
- BCCs usually develop after years of frequent sun exposure or indoor tanning.
- BCCs are common on the head, neck, and arms; however, they can form anywhere on the body, including the chest, abdomen, and legs.
- Early diagnosis and treatment for BCC are important. BCC can grow deep. Allowed to grow, it can penetrate the nerves and bones, causing damage and disfigurement.



Fig.2 Basal cell carcinoma

Squamous cell carcinoma (SCC) of the skin

SCC is the second most common type of skin cancer.

- People who have light skin are most likely to develop SCC. This skin cancer also develops in people who have darker skin.

- SCC often looks like a red firm bump, a scaly patch, or a sore that heals and then re-opens.
- SCC tends to form on skin that gets frequent sun exposure, such as the rim of the ear, face, neck, arms, chest, and back.
- SCC can grow deep into the skin, causing damage and disfigurement.
- Early diagnosis and treatment can prevent SCC from growing deep and spreading to other areas of the body.

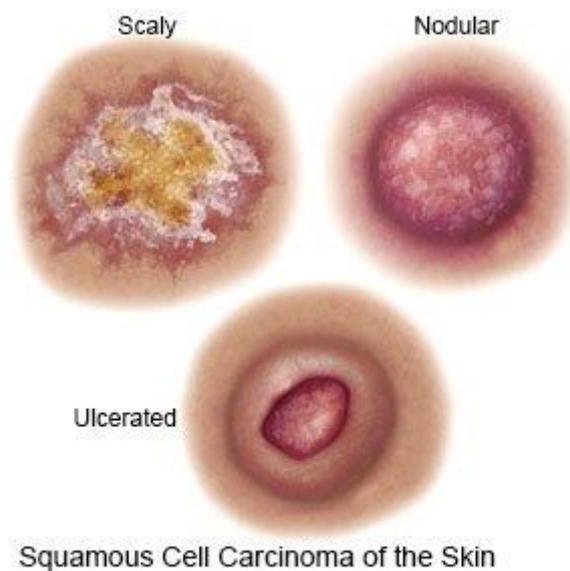


Fig.3 Squamous cell carcinoma

TREATMENT ⁽¹⁾

The first step in the evaluation of skin cancer in patients comprises a thorough history, focusing on general medical and drug history, personal and family history of skin cancer, number of moles including the presence of dysplastic naevil and comprehensive social history, carcinogen or sun exposure. The choice of treatment should be determined by the histological type of the lesion, its size and location, and the age of the patient. No single treatment method is ideal for all lesions. The treatment goals are total removal of the tumor, preservation of function, and a good cosmetic outcome. Curettage and electro-desiccation, cryosurgery, topical chemotherapy, laser surgery, radiotherapy, immunotherapy,^{7,8} Mohs micrographic surgery, and conventional surgical excision are all effective therapeutic options for selective types of BCC.^{42,62} As the treatment for skin cancer needs to be initiated at an

early stage, intervention soon after diagnosis is required for an effective cure of disease. Radiotherapy is effective in treating early stage lesions. New molecular therapeutic approaches for skin cancer include several medications like cryosurgery, immunomodulation with imiquimod, 5-FU, photodynamic therapy and radiation. Small molecule regulators have been identified for a variety of pathways that leads to skin cancer. The pathways are SHH, Ras / Raf, P17INK4A/CDK4/Rb and ARF / p53. Research mainly focuses on these pathways and treatment for skin cancer can be augmented by small changes of pathways.

Current Chemotherapy for Melanoma Skin Cancer^{9,10}

Several chemo drugs may be used to treat melanoma: Dacarbazine (also called DTIC), Temozolomide, Paclitaxel, Carmustine (also known as BCNU), Cisplatin, Carboplatin, Vinblastine, Dacarbazine, temozolomide and paclitaxel may be given either alone or along with some of the other drugs on the list. It is not clear if using combinations of drugs is more helpful than using a single drug, but it can add to the side effects like hair loss, mouth sores, loss of appetite, nausea and vomiting, diarrhea, and increased risk of infection (from too few white blood cells), easy bruising or bleeding (from too few blood platelets), fatigue (from too few red blood cells).

PLANT PROFILE^{4,5}

ZINGIBER OFFICINALE



Botanical Name- *Zingiber officinale*

Family Name – Zingiberaceae

Kingdom – Plantae

Division – Tracheophyta- Vascular plant

Class – Magnoliopsida

Order – Zingiberales

Family – Zingiberaceae

Genus – Zingiber Mill.-ginger

Species – Zingiber officinale Roscoe- garden ginger ⁴.

ARTEMISIA VULGARIS^{4,5}



Botanical Name: Artemisia vulgaris

Order: Asterales

Family: Asteraceae

Genus: Artemisia

Species: A. vulgaris

Formulation of Polyherbal syrup USP³

Preparation of Decoction

250 gms of coarsely powdered whole plants of Zingiber officinale (125gms) and Artemisia vulgaris (125gms) were mixed with 4000ml of water and boiled until the total volume become one-fourth of the initial volume. The decoction is filtered and the filtrate was taken to prepare the polyherbal syrup and for phytochemical studies.

Preparation of Simple syrup as per USP³

Sucrose 666.7 gms is weighed and added to 300ml of distilled water and heated until the sucrose is completely dissolved. Final volume is made up to 1000 ml with distilled water.

Characterization of Polyherbal syrup⁶

Physical appearance, PH, Specific gravity, Refractive index, Viscosity is carried out as per standard guideline given in IP.

CONCLUSION

The study is aimed to design, develop and formulate the poly herbal syrup using the decoction of *Zingiber officinale* (Zingiberaceae) and *Artemisia vulgaris* (Asteraceae) whole plant.

The Formulation is made into simple syrup USP and it is characterized by physical parameters such as Physical appearance, PH, Specific gravity, Refractive index, Viscosity is carried out as per standard guidelines given in IP.

REFERENCES

1. Ramya slipa S, Chidvila v. A Review on skin cancer. international research journal of pharmacy 2013, 4(8).
2. Syed rizwan abbas, Sakina baig. treatment of skin cancer by medicinal. journal of biotechnological science. v-8: I (2): 131-137(2020).
3. Priyanka KG, Rashmi SS. Development and evaluation of herbal syrup from root extract of *Nothosaerva brachiata* and *Gomphrena celosiodies*. International journal of pharmacy and chemistry 2016; 6(3) 473-475.
4. Wallis TE. Text Book of pharmacognosy. Edn 1, vol 1, CBS Publishers and Distribution, Delhi, 1985, 357
5. USP 39-NF 34. Edn 1, Vol. 1, Saffari Garden, United states, 2015, 217-218.
6. The Indian Pharmacopoeia. Edn 6, vol.1, The Indian Pharmacopoeia Commission, Ghaziabad, 2010, 143-146.
7. Clark Jr WH, Reimer RR, Green M, *et al.* Origin of familial melanomas from heritable melanocytic lesions. The B-K mole syndrome. Arch Dermatol 178; 114:732-38. <http://dx.doi.org/10.1001/archderm.114.5.732> PMID: 646394
8. Thomas Ha. How to examine a patient with suspected skin cancer. Medicine 2009; 37(6): 303-4. <http://dx.doi.org/10.1016/j.mpmed.2009.02.015>
9. Levine HL, Bailin PL. Basal cell carcinoma of the head and neck: identification of the high risk patient. Laryngoscope 1980; 90(6): 955- 61. PMID: 7382711.
10. Bart RS, Kopf AW, Petratos MA. X-ray therapy of skin cancer: evaluation of a standardized method for treating basal-cell epitheliomas. Sixth National Cancer Conference Proceedings. Philadelphia: JP Lippincott; 1970

Image Author -1	Author Name - NITHISHKUMAR.G Author Affiliation Author Address/Institute Address - Shri Venkateshwara College of Pharmacy. Ariyur, Puducherry, India
Image Author -2	Author Name- GUHAN.R Author Affiliation Author Address/Institute Address- Shri Venkateshwara College of Pharmacy. Ariyur, Puducherry, India
Image Author -3	Author Name- INDUMATHY.K Author Affiliation Author Address/Institute Address- Shri Venkateshwara College of Pharmacy. Ariyur, Puducherry, India
Image Author -4	Author Name- SENNIAPPAN.P Author Affiliation Author Address/Institute Address- Shri Venkateshwara College of Pharmacy. Ariyur, Puducherry, India
Image Author -5	Author Name- PAVITHRA.P Author Affiliation Author Address/Institute Address- Shri Venkateshwara College of Pharmacy. Ariyur, Puducherry, India