

Ethnopharmacology studies on cassia occidentalis and aloe vera for the management of scabies: Tropical neglected disease

Ridhima Batra^{1*}, Umama Yezdani², Mohammad Gayoor khan³, Ankit Bhatnagar⁴, Syed Ali Hasnain Zaidi⁵

^{1,4,5} Department of Pharmacy, School of pharmaceutical education and research, Jamia Hamdard, New Delhi India

² Department of Pharmacy Practice, MRM College of Pharmacy, Hyderabad, India

³ Department of Pharmaceutical science, Truba institute of Pharmacy Bhopal, India

Abstract

Scabies is not an infection, but an infestation.

Scabies is a skin infestation. It is a disease of global proportions in both human and animal populations. Earlier research on scabies is very limited due to difficulty in finding the organisms. Untreated microscopic mites:

Sarcoptes scabiei can live on skin for months and lay eggs after reproducing on the surface of skin. Till now there are 130 million cases has been registered in the world and around 18000 – 20000 cases in India. This can be detected by recognizing scabies bites and the distinctive red rash. Other symptoms can be intense itching specially at night, pimple like bumps etc. It can be transmitted through direct contact of skin. It is not a sexually transmitted disease. It can be prevented by self-care by washing the clothes with hot water or dry cleaning which kills the scabies mites. Treatment involve like topical creams or lotion which are applied from neck to down and left on for 8-12 hours, and then washed off. For severe conditions tablets are also prescribed. Trigger include such as viruses, allergens, dust etc. It is not like other normal skin diseases.

Keywords: Scabies, Skin disease, WHO, tropical neglected disease

Introduction

A mite causes this common skin condition. Called the human itch mite, this eight-legged bug is so small that you cannot see it on the skin. People get scabies when the mite burrows into the top layer of skin to live and feed. When the skin reacts to the mite, an extremely itchy rash develops.

This mite can travel from the infected person to another person. Most people get scabies from direct, skin-to-skin contact. Less often, people pick up mites from infested items such as bedding, clothes, and furniture. The mite can survive for about three to four days without being on a human. Worldwide, there are millions of cases of scabies each year.

Anyone can get scabies. It strikes people of all ages, races, and income levels. People who are very clean and neat can get scabies. It tends to spread easily in nursing homes and extended-care facilities. The good news is that a dermatologist can successfully diagnose and treat scabies. With today's treatments, scabies need only cause short-term distress.

Scabies can develop anywhere on the skin. The mites, however, prefer to burrow in certain parts of the body. The most common places to have itching and a rash are:

Hands: Mites like to burrow in the skin between the fingers and around the nails.

Arms: Mites like the elbows and wrists.

Skin usually covered by clothing or jewelry: The buttocks, belt line, penis, and skin around the nipples are likely places

for mites to burrow. Mites also like to burrow in skin covered by a bracelet, watchband, or ring.

In adults, the mites rarely burrow into skin above the neck.

Other than adults, scabies can be:

1. Scabies in children

Some children develop widespread scabies. The scabies rash can cover most of the body. Even a child's palms, soles, and scalp can be infested with mites. In babies, the rash often appears on the palms and soles. Babies who have scabies are very irritable and often do not want to eat or sleep. Children, too, are often very irritable. The itch can keep them awake at night.



Fig 1: Small, pus-filled bumps on the sole are often a sign of scabies in infants and young children.

2. Crusted scabies

Also called Norwegian scabies, crusted scabies is a severe form of scabies. People who have crusted scabies have 100s or

even 1,000s of mites in their skin. By comparison, most people who get scabies have 15 to 20 mites on their skin. Crusted scabies develops in people who have a weak immune system due to a medical condition, the elderly, and people who are living in institutions. Crusted scabies develops when the person's body cannot develop any resistance to the mites. Without resistance, the mites quickly multiply. A common sign of crusted scabies is widespread crusts on the skin. These crusts tend to be thick, crumble easily when touched, and look grayish in color. Sometimes the crusts appear on one or a few areas of the body such as the scalp, back, or feet.



Fig 2: Crusts, such as the one on this man's arm and chest, form when people get crusted scabies, also called Norwegian scabies.

1.2 Signs and symptoms of scabies

Signs and symptoms of scabies include

Itching, mainly at night: Itching is the most common symptom. The itch can be so intense that it keeps a person awake at night.

Rash: Many people get the scabies rash. This rash causes little bumps that often form a line. The bumps can look like hives, tiny bites, knots under the skin, or pimples. Some people develop scaly patches that look like eczema.

Sores: Scratching the itchy rash can cause sores. An infection can develop in the sores.

Thick crusts on the skin: Crusts form when a person develops a severe type of scabies called crusted scabies. Another name for crusted scabies is Norwegian scabies. With so many mites burrowing in the skin, the rash and itch become severe. The severe itch can lead to constant scratching. With non-stop scratching, an infection can develop. Non-stop scratching can even lead to sepsis, a sometimes life-threatening condition that develops when the infection enters the blood.



Fig 3: While spending time in a rehabilitation facility, this 75-year-old man developed scabies.

Application of aloe vera

Possible effect of aloe vera for the treatments are:

- Anti-acne
- Burn such as first- and second-degree burns
- Diabetes, Genital herpes
- Itchy rashes on the skin or mouth (lichen plants)
- Psoriasis
- Weight loss

Possible insufficient evidences of aloe vera for the treatments are

- Dandruff
- Dental plaques
- Diabetic foot ulcers
- Diaper rash
- Dry skins
- Gum diseases
- Hyperlipidemia
- Scabies

Pharmacological involvement

The aloe is consisting of lot of micro and macro nutrients. In which the various percentage of compounds is aloe vera are polysaccharides (53%), sugars (5%), minerals (15%), proteins (7%), lipids (17%) and phenolic compounds (2%). Whilst, different types of fat soluble vitamins such as vit-A, vit-C, vit-E and also water soluble such as vit-B1, vit-B2, vit-B3, vit-B9 respectively

Application of cassia Occidentalis

Possible effect of cassia occidentalis for the treatments are:

- Ring worm
- Scabies
- Skin itching diseases (cutaneous diseases)
- Sore eyes (paste of leaves)
- Bone fracture (paste of leaves)
- Hematuria
- Rheumatism
- Typhoid fever
- Tuberculosis
- Haemoglobin disorders
- hepatitis

It is also used against snake bite, insect bites, scorpion sting, constipation, oedema, fever, inflammation. It can also be use as laxative, purgative, febrifuge, vermifuge, anticonvulsant and against chicken pox

Pharmacological involvement

It consist crude fiber, crude protein 2.3%, 20.8%, lipid 14.9% and carbohydrates 48.1%. The different parts of the plant contained different chemical groups included alkaloids, anthocyanosises, phenolics, proteins, phlobatannins, steroids, tannins, flavonoids, anthraquinone, saponins, terpenes, resins, balsams, amino acids, carbohydrates, sugars and cardiac glycosides

2.1. Plant profile aloe vera

Botanical name: *Aloe barbadensis*

Family: Liliaceae

Kingdom: Plantae

Clade: Tracheophytes

Order: Asparagales

Genus: Aloe

Species: Vera

Plant Characters: Colour: dark brown or greenish brown, Taste: bitter, Appearance: it is a stemless or very short-stemmed plant growing in Arid climate up-to the height of 60-100 cm. The leaves are thick and fleshy green that may either be spined or smoothed, stamens 6, unequal, 3 longer than corolla

Microscopical characters: Reddish- brown irregular, angular more or less opaque fragments and also the leaves consists of epidermis, chlorenchyma, aquiferous tissues and vascular bundles xeromorphic characters.



Fig 4: Aloe Vera Plant

2.2 Plant profile cassia occidentalis

Plant Name - *Cassia Occidentalis*

Kingdom: Plantae, **Order:** Fabales, **Family:** Fabaceae,

Subfamily: Caesalpinioideae **Tribe:** Cassieae, **Genus:** Senna,

Species: *S. occidentalis*. The plant is locally called ***Bana Chakunda*** in Odisha, India.



Fig 5: Medicinal Plant Cassia Occidentalis & its Parts

Common Names: Brazil: Mata Pasta, Fedegoso, Paramarioba; Cameroon: Gin-i-nel; China: Wang Jiang Nan, Ye Bian Dou, Li Cha; English: Stinking Weed, Negro Coffee, Coffee Senna, Antbush; France: Bentamare, Café Bastard, Casse Puante, Café des Niors; India: Kassaumdhī, Barrikassaumdhī (Hindi), Doddaagace (Kannada); Panniviram, Ponnativiram (Malayalam); Kasamardah (Sanakrit); Ponnativirai, Peravirai, Nattam takarai (Tamil); Kasinda (Telugu) Indonesia: Menting (Java), Kopi Andelan (Sumatera); Japan: Habuso; Korea: Soggjolmjong; Malaysia: Kacang Kota, Ketepeng Hutan; Niger: Sanga-sanga, Raydore; Nigeria: Kire, Rere, Rai' dore; South Africa: Moshabela moha, Tsinyembane, Umnwanda nyoka Spain: Bricho, Brusca, Frijolillo, Guanina; Thailand: Chumhet tet, and Vietnam: Moug Cassia Occidentalis is widely distributed and very commonly used plant.

It contained many chemical groups included alkaloids, anthocyanosides, phenolics, proteins, phlobatannins, steroids, tannins, flavonoids, anthroquinone, saponins, terpenes, resins, balsams, amino acids, carbohydrates, sugars and cardiac glycosides. *Cassia occidentalis* exerted many pharmacological effects included antimicrobial, anthelmintic, insecticidal, antioxidant, antianxiety, antidepressant, antimutogenic antidiabetic, wound healing, hepatoprotective, renoprotective, sun protective, smooth muscles relaxation, immunomodulating, antiinflammatory, analgesic, antipyretic and other effects. The present review will highlight the chemical constituents and the pharmacological and therapeutic effects of *Cassia occidentalis*.

Objective selection of aloe vera & cassia Occidentalis

1. To Provide treatment that is natural with least side effects
2. To provide a better and effective treatment for the skin diseases like treatment for the skin diseases like Eczema, Scabies, Psoriasis.
3. Regulate a cost effective treatment
4. To provide a treatment with less time duration
5. To reduce the cost of treatment.

Materials and Method

Material was collected from previous reviews and also from patient's previous history and lab reports. Spectroscopy, HPLC etc.

Study Design

This is the prospective study on randomly selected samples from patient of different age over a period of 6 months to 8 months using analysis as a tool.

Result

this finding data proves that Aloe Vera & Cassia Occidentalis can be used in the management and treatment of *Scabies* in a more effective way and with minimum side effect at a minimal cost to the patient. The important ingredient was gelling agent. The pH of the formulation was determined in order to be sure that the formulation can be used without the risk of irritancy to the skin. The pH was found to be 6.6 ± 0.5 for gel which was very near to the neutral pH, thus the formulation can be used without the risk of irritancy to the skin.

Conclusion

There are more than 19 Types of Natural medicine Plant Including Argemone Mexicana, Adiantum incisum, Adiantaceae, *Aloe Vera*, Annona squamosa L, Aristolochia Bracteolata, Cassia Occidentalis, Cannabis sativus, Capsicum, Cassis auriculata, Holoptelea integrifolia, Momordica charantia, Ocimum Canum, etc are helpful in the management of Scabies Naturally. First Government Or state Government should implement take immediate action to Preserve the knowledge of medicinal Plants species and Herbal remedies for the overcome of side effects it is very Essential and it also helps in Homeopathic, Unani, Ayurveda, Siddha, and Allopathic Formulations.

Conflict of Interest

There is No conflict of interest.

Acknowledgment

First of all I would like to Thank my Co- Author Mohammad Gayoor khan B. Pharm from Truba Institute of Pharmacy for ceaseless encouragement during the study and authors are thankful to Ms. Umama Yezdani MRM College of Pharmacy, Hyderabad Telangana India.

References

1. Mohammad Gayoor Khan, Yezdani Umama, Hari Baskar, Kumar Ayush, Karthikeyan Lakshman, Monika Sekar. Ethnopharmacological Studies of Argemone Mexicana for the Management of Psoriasis Followed By Molecular Techniques: Focus on Plant Metabolomics & Mechanism of Action. International Journal of Basic Sciences and Applied Computing. 2019; 2(8):1-5. DOI: 10.35940/ijbsac.H0097.072819
2. Umama Yezdani, Mahmood Ali, Mohammad Gayoor Khan, Ayush Kumar, Prince Bhalla, Mayur Sadar. Pharmacological and Non-Pharmacological approaches to vitiligo. World J Pharm Sci. 2019; 8(9):884-892.
3. Gayoor KM, Kanta SN, Umama Y, Baskar H, Ayush K, Prasad TS. Ethnopharmacological Studies of Argemone mexicana for the Management of Psoriasis Followed by Molecular Techniques through Metabolomics. 2019; 1(1):1003.
4. Karthikeyan Lakshmanan, Hari Baskar Balasubramanian, Rajasekaran Aiyalu, Arivukkarasu Ramasamy. Molecular Docking Studies of Flavones in Gentianaceae Family against Liver Corrective Targets. Research Journal of Pharmacognosy and Phytochemistry. 2019; 11(2):49-53.
5. Mohammad Gayoor khan. A Systemic Review on Nanoparticles. SVOA Materials Science and Technology 1:1(2019)1-3.
6. Umama Yezdani, Mohammad Gayoor khan, Zubia Zainab, Mayur sadar, Shivam Choudghal, Damini Mishra. *et al.* The Current Scenario of Pharmaceutical Research; 3d Tissue Engineering Considered as Eminent Technique. ARC Journal of Public Health and Community Medicine. 2019; 4(2):16-22.
7. Shourabh Rav. *et al.* Novel Approach of Targeted Drug Delivery System and it's Application. ARC Journal of Public Health and Community Medicine. 2019; 4(3):1-4.
8. Mohammad Gayoor Khan, Umama Yezdani. Gold Nanoparticle Sensor for the Detection of Ckd and Use of Nano-medicine in the Treatment of Kidney Diseases. ARC Journal of Nephrology. 2019; 4(2):15-21.
9. Gayoor Khan, Umama Yezdani, Rohit Verma, Raqshan Jabeen, Pradeep Sintha. Detection of Phlebovirus by using qualitative Real time (RT) - PCR and application of silver nanoparticles to control it. World J Pharm Pharm Sci. 2018; 7(11):936-52.
10. Mohd. Gayoor Khan. The Novel Drug Delivery System. World J Pharm Pharm Sci. 2017; 6(7):477-487.
11. Unama Yezdani, Mohd. Gayoor Khan, Fazal Khan, Arvind Verma, Nilesh Kushwah, Rohit Verma. The Drug Targeting in Alzheimer's or Applications & it's Hazards. World J Pharm Sci. 2017; 7(11):1532-1549.
12. Dr. HS Chandel, Sharad P. Panday, Arvind Dangi, Ashish chaurasia, Mohd. Gayoor khan *et al.* Development of Targeted Drug delivery. International Journal of research methodology Ijrm.Human. 2017; 1(2):30-34.
13. Kushwah Nilesh, Yezdani Umama, Mohammad Gayoor khan, Manish kushwah, Kumar Ayush. The Fundamental of Novel Drug Delivery System; Methodology, Role of Nanotechnology; Nanoparticles in Pharmaceutical Research. International Journal of Emerging Technologies and Innovative Research (www.jetir.org), ISSN:2349-5162, Vol.6, Issue 6, page no.140-146, June-2019. DOI: <http://doi.one/10.1729/Journal.21510>
14. Mohd. Gayoor Khan, Nilesh Kushwaha, Fazal Khan, Vipul Patel. Microencapsulation. International Journal of research methodology Ijrm. Human. 2017; 1(2):35-42.
15. Umama Yezdani, Mohd. Gayoor Khan, Nilesh Kushwah, Arvind Verma, Fazal Khan. Application of Nanotechnology in Diagnosis and treatment of various disease and it's future advances in medicine. World J Pharm Pharm Sci. 2018; 7(11):1611-1633.
16. Yezdani Umama, Venkatajah G, Rav Shourabh, Roshan Kumar, Arvind Verma, Ayush Kumar, Md. Khan Gayoor *et al.* Topic- The scenario of pharmaceuticals and development of microwave assisted extraction technique. World J Pharm Pharm Sci. 2019; 8(7):1260-1271.
17. Mohd. Gayoor khan *et al.*, Radiopharmaceuticals Drug interactions. IJCRP, 2017; 1(5):40-47.
18. Dr. Umama Yezdani, Rohit verma, Mr. Ajay Kumar, Krishna Kumar Pandey, Mohd. Gayoor khan *et al.* The fundamental & Development role of epidural steroid injection in management of herniated intervertebral disc with Radiculopathy. IJCRP. 2017; 1(5):40-47.
19. Mohammad Gayoor khan, *et al.*, The Current Scenario of Pharmaceutical Research; 3d Tissue Engineering Considered as Eminent Technique. ARC Journal of Public Health and Community Medicine. 2019; 4(2):16-22. DOI: dx.doi.org/10.20431/2456-0596.0402003.
20. Damini Mishra *et.al.*, "A Systemic Review on Nanoparticles", Journal of Genetics and Genetic Engineering, vol. 3, no. 4, 2019, pp 4-7.
21. Shourabh Rav, Shayam singh Maina, Rachna Malviya, Madan Gopal Kushwah, Mohammad Gayoor khan, Umama Yezdani. Novel approach of targeted drug delivery system and its application. International Journal of Pharmaceutical Research and Development. 2019; 1(1):19-22.
22. Mohammad khan Gayoor, Yezdani Umama, Kumar ayush, sadar mayur, Rav Shorabh, Sahu Lalit, Use of Nanoparticles for The Treatment of Malignant Neoplasm As a Cancer Targeted Drug Delivery System. Asian Journal of Pharmaceutical Research and Development. 2019; 7(4):84-88, DOI: <http://dx.doi.org/10.22270/ajprd.v7i4.513>
23. Mohd. Gayoor Khan. The Novel Drug Delivery System. World J Pharm Pharm Sci. 2017; 6(7):477-487.