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Skin healing activity of *Naringi crenulata* and *Phyllanthus reticulatus*

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Abstract

People suffer from several kinds of skin disorders caused by infections, allergies, genetic make-up, auto immune disorders, side effects of medications etc., Certain skin disorders such as scabies, psoriasis and eczema make them depressed since they are not getting cured even after many treatments which are highly expensive. There are alternative therapies which are supported by scientific evidences to improve such conditions. There are many medicinal plants which cure many ailments of the human beings, making it very difficult to parse out what and how actually work. This research has been taken to find out the efficiency of *Naringi crenulata* and *Phyllanthus reticulatus* in healing and curing eczema associated with scabies. This is a case study of an elderly female who visited one of the tribal healers from the indigenous malasar community in the study area Velliangiri hills reported with eczema associated with scabies.

Keywords: eczema, scabies, *Naringi crenulata*, *Phyllanthus reticulatus*

Introduction

People suffer from several kinds of skin disorders caused by infections, allergies, genetic make-up, auto immune disorders, side effects of medications etc., Certain skin disorders such as scabies, psoriasis and eczema make them depressed since they are not getting cured even after many treatments which are highly expensive. There are alternative therapies which are supported by scientific evidences to improve such conditions. World Allergy Organization Journal says that it is difficult to control atopic dermatitis ^[1] popularly known as eczema. There are many medicinal plants which cure many ailments of the human beings, making it very difficult to parse out what and how actually work. This research has been taken to find out the efficiency of *Naringi crenulata* and *Phyllanthus reticulatus* in healing and curing eczema associated with scabies. This is a case study of an elderly female who visited one of the tribal healers in the study area reported with eczema associated with scabies.

Eczema

Eczema also known as Atopic Dermatitis (AD) is a common and distressing disease with worldwide prevalence, affecting up to 20% of children and 3% of adults. In 1985 one small study found that 30% of adults with atopic eczema had detectable serum IgG antibodies to gliadin (a component of gluten), compared to only 6.5% of the general population ^[2]. In 2004, another study looked at over 1,000 patients with celiac disease and found that atopic dermatitis was about three times more common in these patients than in the general population ^[3]. It is characterised with inflamed skin, redness, itching, irritation and rough patches on the epidermis. It has been defined as Atopic dermatitis (AD, atopic eczema, eczema) is an inflammatory, chronically relapsing and intensely pruritic skin disease occurring often in families with atopic diseases such as atopic dermatitis, bronchial asthma and/or allergic rhinoconjunctivitis ^[4].

Most of the time, many patients with this problem are prescribed with the topical immunomodulators, tacrolimus and pimecrolimus. The drugs are often given to people for whom the potential side effects of topical corticosteroids such as systemic absorption, skin thinning, telangiectasia are a concern. However, the US Food and Drug Administration (FDA) reviewed the safety of these agents and warned that they may be associated with a risk of cancer ^[5]. One of the most commonly prescribed medications for eczema is topical corticosteroids which reduce the inflammation, itching and the redness. But there are common side effects such as thinning of the skin (atrophy), skin thickening (lichenification), stretch marks (striae), darkening of the skin, glaucoma (damage to the eye's optic nerve), cataracts

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(clouding of the eye lens), tiny pink bumps on the skin, acne, red, pus-filled hair follicles (folliculitis), adrenal suppression, topical steroid addiction [6], fluid collection in the legs, high blood pressure, bone damage (thinning), Cushing’s syndrome, fast weight gain and mood swing [7]. Common side effects of Topical calcineurin inhibitors (nonsteroids) are medications that are applied to the parts of the skin affected by eczema. Common side effects include mild burning or stinging sensation when the medication is first applied to the skin. A very few number of patients on Elidel received a diagnosis of skin cancer or lymphoma, a type of blood cancer [6]. Topical PDE4 inhibitor inhibits an enzyme called phosphodiesterase 4 from allowing too much inflammation in the body. PDE4 is produced by cells in our immune system and helps the body function in part by controlling cytokines. Cytokines are bits of protein that contribute to inflammation. Reported side effects include skin irritation where the ointment is applied [6]. Things and factors such as soaps, detergents, shampoos, disinfectants, juices from fresh fruits, meats, certain vegetables, dairy products, eggs, nuts, certain seeds, soy products, wheat, dust mites, pets, pollens, mould, dandruff, bacteria such as *Staphylococcus aureus*, viruses, and certain fungi worsen eczema.

Scabies

Scabies is a kind of skin infested with itch mites *Sarcoptes scabiei* result in redness of the skin and itching. These microscopic mites can live on the skin for several months. They reproduce on the surface of the infested skin, burrow into it and lay eggs. It is a highly contagious problem that can easily be passed from one person to another through direct skin contact. It may also be transmitted through infested clothing or bedding. Treatment for scabies usually involves getting rid of the infestation with prescription ointments, creams, and lotions that can be applied directly to the skin. Oral medications are also available [8].

Phytomedicine

Phytomedicines from medicinal plants are good for these conditions without any side effects. Herbs like *Acacia Arabica*, *Butea monosperma*, *Linum usitatissimum*, *Madhuca indica*, *Azadirachta indica*, *Curcuma longa*, *Glycyrrhiza glabra*, *Aloe vera* and coconut oil are used for the treatment of eczema effectively. In the Indian system of medicine, *Azadirachta indica* and *Curcuma longa* has been used for healing scabies. This is a very cheap, easily available, effective and acceptable mode of treatment for the villagers in the developing countries [9].

Materials and Methods

Study Area

The study area is the settlements of the prestigious tribal community of Velliangiri hills located in the eastern part of Western Ghats which makes an important component of “The Nilgiri Biosphere” in the Tamil Nadu State. This Velliangiri Hills is known as South Kailash situated in Coimbatore. It is

located between 10.9888°N and 76.6873°E. The study area has typical tropical climate and is situated in the elevation of 300 MSL with an annual rainfall about 150 mm. The area is rich in flora and has diverse biomes in different elevations. The malasars have a vast knowledge about medicinal plants. Their traditional knowledge and the rich biodiversity provide an ideal condition to carry out the study.

Specimen collection

During frequent visits to the field, the plant specimens *Naringi crenulata* and *Phyllanthus reticulatus* were collected. During collection, diseased parts and damaged parts were discarded to avoid contamination. The collected plants were cleaned and washed thoroughly in running water. The leaves were collected and dried separately and kept for further studies.

Case study

A female patient who visited an elderly tribal healer was selected for case study as she volunteered. She was suffering with eczema associated scabies (Picture 1). It has been informed that she was suffering from the disease for nine years. She has taken many medications. In spite of all her medications her legs started to swell. She experienced difficulty while walking since her foot were painful due to swelling. Her body weight was also increased. She has reported about scanty and difficult urination. She has taken medications for this also. After getting consulted with the tribal healer she has stopped all her previous medications and started to take the herbal formulation.



Picture 1: Eczema associated with Scabies

Traditional tribal medication

The medication was given to the woman as below:

Table 1: Topical application

S. No	Ingredients	Parts used	Quantity (grams)
1.	<i>Naringi crenulata</i>	Fresh leaves	50
2.	<i>Phyllanthus reticulatus</i>	Fresh leaves	100
3.	<i>Glycyrrhiza glabra</i>	Dried root	5
4.	Water(Boiled and cooled)	-	Few drops

Table 2: Internal (For consumption)

S. No	Name of the plant	Parts used	Quantity	Mode
1	<i>Naringi crenulata</i>	Fresh leaves	1 leaf	Chewing
2	<i>Phyllanthus reticulatus</i>	Fresh leaves	1 tbsp	Decoction
3	<i>Glycyrrhiza glabra</i>	Dried root(powder)	A pinch	
4	<i>Piper nigrum</i>	Corns(powder)	2 pinches	
5	<i>Phyllanthus reticulatus</i>	Stem	Tooth stick	Chewing and brushing the teeth

Results and discussion

The leaves and powder were ground together with the boiled and cooled water to get paste. This paste (Table 1) was applied on the affected area daily once at bed time. Before applying the paste the affected area was cleaned with lukewarm water with a pinch of rock salt and turmeric powder. She was advised to consume one leaf of *Naringi crenulata* (Plate 1) per day and leaf decoction prepared from *Phyllanthus reticulatus* (Plate 2) leaves, a pinch of *Glycyrrhiza glabra* root powder and 2 pinches of *Piper nigrum* powder once per day. She was advised to visit the healer once in ten days. She showed the improvement during her second visit. On her third visit she was getting healed perfectly (Picture 2). Even the decoloured skin started to regain its original colour. Her body weight also started to reduce. Her urination became normal. Swollen legs also became normal.



Plate 1: *Naringi crenulata*



Plate 2: *Phyllanthus reticulatus*



Picture 2: Healed legs

Conclusion

The interview and discussion with the traditional healers and the client proved the medicinal value of the two selected plants *Naringi crenulata* and *Phyllanthus reticulatus*. It has become very simple and inexpensive to cure the skin disorders like Eczema and scabies. Hence such valuable species have to be preserved in their natural ecosystem to get the at most benefit.

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