

Neem (*Azadirachta indica*), Reetha (*Sapindus mukorossi*), Shikakai (*Acacia concinna*), Hibiscus flower (*Hibiscus sabdariffa*) oil and Lemon: A natural antidandruff formula

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Abstract

Context: Seborrheic Dermatitis (SD) and dandruff are of a continuous spectrum of the same disease that affects the seborrheic areas of the body.

Aims: to evaluate potency of *Azadirachta indica* (neem) Reetha (*Sapindus mukorossi*), shikakai (*Acacia concinna*), hibiscus flower (*Hibiscus sabdariffa*) oil and Lemon in resistance cases of dandruff to shampoo and conditioner containing Pyrithione Zinc, Coal Tar, Salicylic Acid, Selenium Sulfide and Ketoconazole.

Settings and Design: This was a longitudinal study done on the subject randomly selected from attending private OPD for the dandruff problem.

Methods and Material: Group 1 (n=88) consists of the patient who was treated with shampoo and conditioner containing Pyrithione Zinc, Coal Tar, Salicylic Acid, Selenium Sulfide and Ketoconazole. Group 2 (n=28) consists of the patient selected from 58 patients who does not responded to treatment (group1) and were given Neem (*Azadirachta indica*), Reetha (*Sapindus mukorossi*), shikakai (*Acacia concinna*), hibiscus flower (*Hibiscus sabdariffa*) oil and Lemon. Scale and scalp itching were compared amongst two groups.

Statistical analysis used: chi-square test.

Results: Significant reduction in scalp itching and scale were seen in group 2.

Conclusions: Neem (*Azadirachta indica*), Reetha (*Sapindus mukorossi*), shikakai (*Acacia concinna*), hibiscus flower (*Hibiscus sabdariffa*) oil and Lemon can be used as natural antidandruff agents.

Keywords: seborrheic dermatitis, malassezia furfur natural antidandruff

Introduction

Seborrheic Dermatitis and dandruff are of a continuous spectrum of the same disease that affects the seborrheic areas of the body. Dandruff is restricted to the scalp, and involves itchy, flaking skin without visible inflammation. Treatment of SD and dandruff focuses on clearing signs of the disease. Because the main underlying pathogenic mechanisms involve *Malassezia* proliferation and local skin irritation and inflammation, the most common treatment is topical antifungal and anti-inflammatory agents. Other widely used therapies are coal tar, lithium gluconate/ succinate and phototherapy. Newer therapy include immune modulators [1, 2]. However, all these treatment modalities are not free from the side effect.

Balaji Rao NS had given an account of the use of 25 plant species by local herbalists of tirumala hills, chittoor district of Andhra Pradesh for dandruff [3]. Pingili M *et al* showed antifungal activity by lemon, amla, shikakai, henna (decreasing order of activity). Further they compared their results with the antifungal activity of branded shampoos and promising activity was seen against *Malassezia furfur* [4]. Similar results were shown by some authors and also there were less side effects. [5, 6].

In the present study, we had taken an attempt evaluate potency of *Azadirachta indica* (neem) Reetha (*Sapindus mukorossi*), shikakai (*Acacia concinna*), hibiscus flower (*Hibiscus sabdariffa*) oil and Lemon in resistance cases of dandruff to shampoo and conditioner containing Pyrithione Zinc, Coal Tar,

Salicylic Acid, Selenium Sulfide and Ketoconazole. Thus it will be enable to us to know whether they can be used as main line treatment in dandruff.

Subjects and Methods

This was a longitudinal study done on the subject randomly selected from attending private OPD for the dandruff problem. Initially these patients (n=88) were given scalp shampoo and conditioner containing Pyrithione Zinc, Coal Tar, Salicylic Acid, Selenium Sulfide and Ketoconazole. These were considered as group 1. However 58 of these patients were resistant to treatment i.e. they could not get any benefit from this treatment. We had given the option of using Neem (*Azadirachta indica*), Reetha (*Sapindus mukorossi*), shikakai (*Acacia concinna*), hibiscus flower (*Hibiscus sabdariffa*) oil and Lemon. Of the 58, twenty eight volunteered for the study and other patient were referred to dermatologist for further treatment of dandruff.

Total 28 volunteer (13 Males and 15 females) aged between 15 to 60 years participated in the study. Patient known to have allergy to these agents and local infection of the hair were excluded from the study. These were considered as group 2.

Methodology

All patient had undergone detail general, systemic and local (scalp hair) examination.

They were advised to apply hibiscus flower (boiled in coconut oil) on scalp 3 times a week followed by hair cleaning by 2 tablespoon extract each of neem leaves, reetha, shikakai and lemon juice in morning for two month. They were instructed to avoid bath soap and shampoo. They were followed up for 2 months at the interval of two months.

Statistical analysis was done using statistical software. Categorical or nominal variable would be summarized by count or percentage, Numerical variable by mean and SD. Difference between categorical variable was be tested by chi-square test.

Observations and Results

Initially eighty eight patients (29.12 yrs ± 7.14) were given scalp shampoo and conditioner containing Pyrithione Zinc, Coal Tar, Salicylic Acid, Selenium Sulfide and Ketoconazole, 58 (31.13 yrs ± 5.31) of these patients were resistant to treatment. These 88 patients were considered as group 1.

Out of 58, twenty-eight, i.e. fifteen females (33 yrs ± 6.44) and 13 males (34.56 yrs ± 7.24) volunteered for the study. These 28 patients were considered as group 2.

(P<0.05 significant difference between two groups)

There was significant difference between two groups.

There were no clinically reported adverse drug reactions and drop outs in group 2.

Table 1: Comparison of scales in two groups at end of two months

	No scales	Scales
Group 1 (n=88)	30	58
Group 2 (n=28)	19	9

Table 2: Comparison of scalp itching in two groups at end of two months

	No scalp itching	scalp itching
Group 1 (n=88)	30	58
Group 2 (n=28)	26	2

Discussion

Aim of the present study was to evaluate potency of Neem (Azadirachta indica), Reetha (Sapindus mukorossi), shikakai (Acacia concinna), hibiscus flower (Hibiscus sabdariffa) oil and Lemon in resistance cases of dandruff. These agents were found to be useful as antidandruff agent. Scales and scalp itching is the most common symptom of dandruff which were significantly decreased with these agents.

Similar results were found by some authors [4, 7, 3, 6]. Pingili M *et al* found that Plant extracts have good activity against dandruff causing organism *Malassezia furfur* and she advocated use plant extracts treating dandruff [4].

Extracts of neem leaf, neem oil and seed kernels are effective against certain human fungi, including Trichophyton, Epidermophyton, Microsporum, Trichosporon, Geotricum and Candida. High anti mycotic activity with extracts of different parts of neem has already been reported [8]. Pingili M *et al* showed antifungal activity by lemon, amla, shikakai, henna (decreasing order of activity). Further they compared their results with the antifungal activity of branded shampoos and promising activity was seen against *Malassezia furfur* [4]. These products are main ingredient of many herbal shampoo and they are found to be useful in dandruff treatment. This antidandruff shampoo is known to antifungal, anti-inflammatory and local immune-stimulatory action [5, 9-11]

Neem (Azadirachta indica) had been shown to inhibit dermatophyte. It is considered to change hydrophobicity of candidial cell. This antiadhesive mechanism is responsible for antifungal activity [12]. Neem is considered to curer of all disease. It is considered to be effective in skin infection, rashes & pimples, immunity booster, anti obesity, blood purifier for beautiful & healthy skin, anti diabetic, anti viral, dispels intestinal worms and parasites, malaria, piles, hair disorder & oral disorders [13].

Reetha (Sapindus mukorossi) is used as natural hair and body cleanser. It also acts as great face and body exfoliant [13].

Shikakai (Acacia concinna) superior cleanser for lustrous long hair and has been reported as promoting hair growth and preventing dandruff. It also helps in removing dandruff and lice & very effective in removing oil and dirt from hair [13]. It has a naturally mild pH and is a natural hair conditioner [14].

Hibiscus flower (Hibiscus sabdariffa) oil used to lessen gray hair and promote hair growth. It is considered to be beneficial for hair and scalp [14] Lemon has strong antioxidant, antibacterial and antifungal effects [10].

Besides this, these agents also had no adverse drug reaction reported as in our study [6] It is also very cost effective. In India all these plants are readily available.

Conclusion

Neem (Azadirachta indica), Reetha (Sapindus mukorossi), shikakai (Acacia concinna), hibiscus flower (Hibiscus sabdariffa) oil and Lemon reduces can be used as a natural antidandruff agent even in resistant cases.

Limitation of the study

The sample size was very small. Further we could do multiple groups, each group of allopathic treatment, antiherbal shampoo treatment, and extract of these agents (used in present study). Out of 58, twenty eight persons, volunteered for the study. We could not follow up remaining 30 patients. Also we could have involved dermatologist in the study. Keeping all these factors, we recommend the large multicentre trials.

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