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## ROLE OF *ZIZIPHUS JUJUBE* (MEDICINAL PLANT) IN THE MANAGEMENT OF DANDRUFF- A CASE STUDY

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### ABSTRACT

Dandruff is a common condition affecting the scalp. It is characterized by scaling of the scalp and associated with seborrhoea (seborrhoeic dermatitis). The yeast, *pityrosporum ovale* is the contributing organism in the etiology of dandruff. Medicinal plants are the key role in the human health care. *Ziziphus jujube* belongs to the family Rhamnaceae it is called Jujube tree (*Ilanthai*). The plant is commonly seen in Jaffna district. The objective of the study is to observe the effect of *Ziziphus jujube* leaves paste in the management of dandruff. The case report was a female patient of one year old attended the Herbal Health Care Centre , Jaffna, Sri Lanka, with problems of infantile dandruff on the head. Patient underwent a clinical examination of the scalp. Patient were advised to do some methods to apply *Ziziphus jujube* leaves paste per week for a period of 6 weeks to the scalp with the contact period of 3-4 hours. Patient was instructed to apply *Ziziphus jujube* leaves paste without other treatment. Patient was followed – up for a period of 6 weeks and at each visits, they was asked about the frequency of the application. Clinical assessment of scalp lesions was done objectively (by doctor) and also subjectively. The goals of the therapy are to reduce morbidity and prevent complications. Dandruff is a natural process, which cannot be eliminated and only be managed and controlled. This study observed a reduction of itching, white scales, hair fall and dandruff, subjective evaluation revealed remarkable improvement. This plant uses traditionally for antifungal, antibacterial, antiulcer, anti-inflammatory and sedative. This study observed symptomatic and clinical improvement of dandruff in 6 weeks. It is also well tolerated by the patients. Therefore it may be concluded that this *Ziziphus jujube* paste is effective and safe in the management of dandruff.

**Key words:** *Ziziphus jujube*, *pityrosporum ovale*

## **INTRODUCTION:**

Dandruff is a chronic scalp condition characterized by scaling, itching and redness of the scalp. It occurs when scalp sheds epidermal cells in large clumps. The skin of scalp renews itself about once a month. Usually, scalp sheds dead cells in nearly invisible way, but sometimes cell turnover becomes unusually rapid and dead cells are shed as visible flakes called dandruff [1]. Dandruff is a major cosmetic problem that poses very great public health concern both in developed and developing countries [2]. According to the symptoms dandruff is classified into two types – Dry (common) and Oily. Dry dandruff also known as pityriasis simplex is characterized by excessive formation of minute scales of white grayish or ashen color, accumulating on the scalp area. These scales are at first localized in the middle of scalp area and then spread towards parietal, frontal and occipital areas. In this type of dandruff, no excessive hair loss is observed. The other type of dandruff is called oily dandruff or Pityriasis steatoides. It arises on the scalp skin with varied intensity of sebum production. Inflammation of varied intensity develops on the scalp skin along with the appearance of oily scales of dirty yellow colour that can form lesions. Hair fall is common; it may also exacerbate androgenetic alopecia. The most common site affected by this type of dandruff is scalp, but it can occur between eyebrows, along the side of nose, behind the ears, over the breastbone and sometimes in the armpits [3]. Dandruff scale is a cluster of corneocytes, which have retained a large degree of cohesion with one another and detach as such from the surface of the stratum corneum. In the physiological spectrum of scaling about 48,000 cells/cm<sup>2</sup> get released normally after detergent treatment and their number goes up to 800,000 cells/cm<sup>2</sup> during dandruff and seborrhoeic dermatitis.

Dandruff is actually caused by a microbes and it is a 100% natural and called namely as a malassezia. Malassezia (formerly known as Pityrosporum) is a monophyletic genus of fungi and found all warm-blooded mammals and humans and it contributed dandruff, atopic eczema/ dermatitis, pityriasis, versicolor, seborrheic dermatitis and folliculitis etc.. There's more to the body's response to malassezia

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and oleic acid than just flaking. Dandruff causes the itchy scalp, dry scalp, inflammation, a red scalp etc. Shampoo is the best remedy to recover from the hair from dandruff. Antidandruff shampoo is a complicated formula, because it containing combination of surfactant, conditioners, hair softeners and anti dandruff agents. The ph of the products, solubility of actives, and deposition of actives are playing a crucial role in anti dandruff shampoo. Now a day's many researchers proved that the herbal/natural/ Siddha ,Ayurvedic materials also control the anti dandruff and many natural products having the potential against the cure against the malassezia fungi. Shruthi [1] exclusively studied that effect of rice-water in reducing the growth of dandruff-causing fungi. Many scientists found that anti fungal activity of neem [2,3]; similarly the effects of lemon on anti fungal activity was explored by Glinksy and Avraham Raz [4-6] exclusively studied the various natural remedies against the dandruff fungi. Present study aimed to generate the authentic document about the synergistic action of herbal materials against the dandruff caused fungi [7-9]. Here, authors investigated the effectiveness of a natural approach of *Ziziphus jujube (herbs)* for dandruff suffering people. So authors have aimed to generate the authentic documents about the safety and efficacy of dandruff control *Ziziphus jujube* paste on patients suffering from the dandruff issues.

Medicinal plants only a key role in the human health care. About 80% of the world population relies on the use of traditional medicine, which is predominantly based on plant material[10].

*Ziziphus jujube* belongs to the family Rhamnaceae it is called *Ilanthai*. (Jujube tree). The plant is commonly known as Jaffna district. The leaves of the plant are used in the treatments of diarrhea, wounds, abscesses, swelling [11].



**Fig.-1 - *Ziziphus jujube* family- *Rhamnaceae***

It is a low much branched, deciduous tree with spreading crown, dark grayish black bark having irregular cracks and strong reddish hard wood. Leaves simple, flowers yellow. Leaves contain tannin.

The survey of literature reveals that the whole plant and leaves of *Ziziphus jujube* found to be used in traditional system of medicine as a tonic however immune-modulator activity of *Ziziphus jujube* has not been reported scientifically.

### **OBJECTIVES**

The study was to estimate the clinical efficacy and safety assessment of herbal paste *Ziziphus jujube* for the management of dandruff treatment.

### **CASE REPORT**

A female patient of aged one year attended the Herbal Health Care Centre, Jaffna, Sri Lanka, with problems of infantile dandruff on the head. Patient underwent a through clinical examination, with local scalp skin examination. Patient were advised to apply *Ziziphus jujube* leaves paste daily for a period of 6 weeks with gentle massage to the entire scalp and were advised to apply the leave paste of

the *Ziziphus jujube* on the scalp for a contact period of minimum 3-4 hours. Patient was instructed to avoid other application during the period of *Ziziphus jujube* leaves paste treatment.

**Follow -up and monitoring:**

Patient was followed - up for a period of 6 weeks and at each weekly follow - up visits, they was asked about the frequency of the application. Clinical assessment of scalp lesions was done objectively (by doctor) and also subjectively. Thorough scalp examination was done after completion of one week and at the end of study.



***Fig. 2. before treatment***



*Fig - 3. after treatment*

## RESULT

### Gradation of subjective parameters

1. **Dryness of scalp** : Normal scalp -00, Feels dryness off and on -01, Feels dryness of scalp during winter 02, Feels dryness of scalp in all seasons-03
2. **Itching of scalp**: No Itching -00, Feels itching off and on -01, Continuous but specific area- 02, Continuous and all over scalp-03
3. **Boils on scalp**: No boil- 00, Small one or two any side- 01, Localised pustules/dry02, All over scalp-03
4. **Hair fall**: No Hair fall -00, Mild Hair fall in a week -01, Heavy only during combing -02, Heavy during comb, hair wash, on pillow -03
5. **Scaly scalp**: Normal scalp-00, Seasonal all over scalp-01, Localised-02, All over scalp in any season -03
6. **Graying of Hair**: No Graying-00, Less than 5 any side -01, All over gradual graying -02, All over rapid graying -03
7. **Splitting ends of hair**: No splitting of hair- 00, Mild splitting only at ends-01, Splitting off & on seasonal or exposure -02, Splitting in whole hairs -03

**Table :-1 ; Observation of symptoms**

<b>Signs &amp; Symptoms</b>	<b>Score Before Treatment</b>	<b>Score After Treatment</b>	<b>% of Relief</b>
Dryness of scalp	03	01	35.52%
Itching of scalp	03	01	35.52%
Boils on scalp	01	00	100 %
Hair fall	01	00	100%
Scaly scalp	03	01	35.52%

**DISCUSSION :**

A person's entire body surface continuously sheds dead skin cells and the skin itself sheds every 24 days. Dandruff, the shedding of dead skin cells from the scalp at an excessive rate, is the result of the normal growing process of scalp skin cells. Dandruff may be caused by several different factors, but the exact underlying cause of dandruff is unknown. Dandruff, the visible desquamation of scalp, is the mildest manifestation of seborrheic dermatitis. Dandruff usually is a result of *pityrosourum ovale* infection combined with multiple host factors. The severity of dandruff varies from mild to exfoliative erythroderma. Seborrheic eczema is a more severe form of dandruff, which affects the skin around the eyebrows, nose, ears, face and forehead, and the typical scales are yellowish and greasy with inflamed skin. The aim of dandruff treatment is to reduce the number of *pityrosourum ovale* on the scalp, and the goals of therapy are to reduce morbidity and prevent complications. Dandruff is a natural process, which cannot be eliminated and only be managed and controlled. This plant uses traditionally for antifungal, antibacterial, antiulcer, anti-inflammatory, sedative [12]. This study observed a reduction of itching, white scales, hair fall and dandruff, subjective evaluation revealed remarkable improvement.

## **CONCLUSION:**

This study observed symptomatic and clinical improvement in dandruff in 6 weeks. It is well tolerated by the patients. Therefore it may be concluded that the *Ziziphus jujube* paste is effective and safe in the management of dandruff.

**ETHICS APPROVAL AND CONSENT TO PARTICIPATE:** Not applicable.

**CONSENT FOR PUBLICATION:** Not applicable.

**AVAILABILITY OF DATA AND MATERIALS:** The author confirms that the data supporting the findings of this research are available within the article.

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