



## PIMECROLIMUS CREAM 1% FOR TREATMENT OF *ALOPECIA AREATA*

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### ABSTRACT

To explore the effectiveness of pimecrolimus cream 1% used twice daily (BID) for the treatment of *Alopecia areata*, ten patients, who had used pimecrolimus cream 1% monotherapy BID for at least 2 months and who had photographs taken at baseline and after one month and after two months of treatments. The total effected surface area (cm) of *Alopecia areata* in the baseline was measured by metric tape and follow up was compared. Results revealed that the ten patients who included in this study are males and the response to pimecrolimus cream 1% BID was about 20-40 % decrease in size of patches after one month of treatment but all patients were completely cured (100%) after two months of treatments. In conclusion: the pimecrolimus cream 1% could be used by dermatologist for the treatment of *Alopecia areata*.

**KEYWORDS:** Pimecrolimus cream, *Alopecia areata*, dermatology.

### INTRODUCTION

Alopecia means hair loss when a person has a medical condition called *Alopecia areata*. The hair falls out in round patches; the hair can fall out on the scalp and elsewhere on the body<sup>[1]</sup>. *Alopecia areata* characterized by rapid and complete loss of hair in one or more often, several round or oval patches, usually on the scalp, bearded area, eyebrows, eyelashes, and less commonly, on other hairy areas of the body. Often the patches are from 1-5 cm in diameter, resting hair may be found within the patches<sup>[2]</sup>. Early in the course there may be sparing of gray hair. Nearly always the hair loss is patch in distribution, however, case may present in a diffuse pattern. At the periphery of the bald patch are loose hairs that may be broken off near the scalp leaving short stumps, as a result of atrophy of that portion, hence the term exclamation point hair<sup>[3]</sup>. *Alopecia areata* can cause different types of hair loss<sup>[4]</sup>.

Each of these types has a different name *i.e.* *Alopecia areata* (hair loss in patches), *Alopecia totalis* (lose all hair on the scalp), *Alopecia universalis* (lose all hair on the body). Not everyone loses all the hair on the scalp or body, this happens to a about 5% of people<sup>[5]</sup>. Hair often grows back but may fall out again sometimes the hair loss lasts for many years<sup>[6]</sup>. *Alopecia* is not contagious; it is not due to nerves, immune system attacks the hair follicles causing hair loss<sup>[7]</sup>. This disease most often occurs in otherwise healthy people. *Alopecia areata* usually occur without associated diseases. However, there is higher incidence than usual in patients with atopic dermatitis, Down syndrom, lichen planus and other autoimmune diseases such as systemic lupus

erythematosus, thyroiditis, *Myasthenia gravis* and vitiligo<sup>[8]</sup>. In about 10% of cases of *Alopecia areata* associated with nail involvement. People can have this type of hair loss at any age<sup>[9]</sup>. *Alopecia areata* is an autoimmune disease and there is no cure for alopecia areata<sup>[10]</sup>. Hair often regrow on its own and treatment can help the hair regrow more quickly<sup>[11]</sup>, so dermatologist may prescribe one or more of the Following<sup>[12]</sup> (to suppresses or alters the immune system)

Corticosteroids

Anthralin

Diphencyprone (DPCP)

Other treatments

Researchers are working to advance the treatment of *Alopecia areata*, they are exploring other medicines that work on the patient immune system<sup>[13]</sup>, pimecrolimus cream 1% is an immunosuppressant<sup>[14]</sup>, It work by decreasing body immune system to help slow down the growth of atopic dermatitis on your skin and it used to treat sever atopic dermatitis when other medications have not work well<sup>[15]</sup> also pimecrolimus cream have been shown to repigment skin in patient with vitiligo<sup>[16]</sup> (autoimmune disease).

### METHODOLOGY

Ten male patient were included in the present study with age range from 20-40 years and the patient diagnosed clinically with alopecia areata had received pimecrolimus cream 1% BID as a monotherapy for the treatment of their hair loss for at least 2 months and for which photos had been taken before and after treatment. The age of the patients gender, duration, number of patches, site, size of

lesion and family history of *Alopecia areata* or other autoimmune disease had been recorded (table 1). All patients were photographed with iPhone 6 cameras at the baseline and after one month of therapy and after two months of therapy, and the extent patch (size) was measured by metric tape at the baseline and after 1 month of treatment and after two months of treatment

of *Alopecia areata*. Over the scalp and beard area and the size measured by metric tape was between 1-5 cm in diameter and the duration of *Alopecia areata* range from 2-4 months. There was a significant response to pimecrolimus cream specially after 2 month of treatment. The size of patch decreased by about 20-40 % (2-4 cm) in size of patches after one month of treatment (figure 1,2) but all patients were completely cured (100%) after two months of treatments (figure 1,2).

**RESULTS**

All patient included in this work are males and aged between 21-40 years with single and multiple patches

**TABLE 1:** The age of the patient’s gender, duration, number of patches, site, size of lesion and family history of *Alopecia areata*

Patient No.	Age	Gender	Duration of the lesion	No .of the Patch	Site of the lesion	Family history	Size of the lesion	Percentage of cure after 1m of Rx	Percentage of cure after 2m of Rx
1	21	Male	1 M	1	Scalp	-ve	1cm	20%	100%
2	25	Male	2 M	2	beard	+ve	1cm	30%	100%
3	22	Male	3 M	2	Scalp	-ve	5cm	35%	100%
4	24	Male	1 M	1	Scalp	-ve	2cm	20%	100%
5	30	Male	2 M	2	Scalp	+ve	1cm	40%	100%
6	29	Male	4 M	2	beard	-ve	2cm	40%	100%
7	40	Male	3 M	1	Scalp	-ve	3 cm	30%	100%
8	39	Male	1 M	2	beard	-ve	4 cm	20%	100%
9	30	Male	3 M	1	beard	-ve	2 cm	40%	100%
10	40	Male	4 M	1	beard	+ve	5 cm	30%	100%



Before treatment



after one month



**FIGURE 1:** After two month



Before treatment



after one month



After two month

**FIGURE: 2****DISCUSSION**

*Alopecia areata* is not contagious disease it's an autoimmune disease and what happen is that the immune system attack the hair follicles causing hair loss. There is no cure for *Alopecia areata* and the hair often regrows on its own .Treatment can help the hair regrow more quickly and this is very important point because this disease can cause considerable stress to those who suffer from it . We chose pimecrolimus cream 1% to treat *Alopecia areata* because it is an autoimmune disease and pimecrolimus is an immunosuppressant. The result of these study suggest that pimecrolimus cream 1% BID for two months duration (figure1,2), may be effective therapy for the treatment of *Alopecia areata* and this study regarded as the first study had been done for the treatment of *Alopecia areata* by pimecrolimus cream 1% and the result was very excellent because all patient had been cured (100%) (Figure 1, 2).

**CONCLUSION**

Pimecrolimus cream 1% could be used by dermatologist as an excellent therapy for the treatment alopecia areata.

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