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Original Research Paper

Dermatology

A PROSPECTIVE CASE SERIES OF EYEBROWS ALOPECIA AREATA TREATMENT WITH 20% TCA APPLICATION ALONG WITH TOPICAL BIMATOPROST SOLUTION AT SHADAN INSTITUTE OF MEDICAL SCIENCES.

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ABSTRACT

Background Alopecia areata is an autoimmune condition leading to partial or complete non scarring hair loss. The management of AA (eyebrow) is challenging, as all the available treatment don't ensure a long-term remission. **Aim** Seven patients having U/L or B/L AA of eyebrow were included in study to know the efficacy of 20%TCA application along with bimatoprost solution as topical application as a new modality of treatment where other medications like Topical corticosteroids, oral minipulse therapy of systemic corticosteroids intralesional corticosteroids, Puva, immunotherapy, excimer laser, jak kinase inhibitor were not giving promising results. **Results:** Eyebrows alopecia areata treatment with 20% TCA application along with topical bimatoprost solution has given a new treatment modality in dermatology. **Conclusion:** Management of AA is particularly challenging given the chronicity of the condition. It is crucial to evaluate the impact of the disease on the patients physical and emotional well-being, including issues like self-confidence, self-image, and acceptance by peers. Parental anxiety, frustration, guilt, and expectations must also be proactively managed to ensure an overall holistic management of the patient. AA is a chronic inflammatory disorder with a remitting and relapsing course. There are sparse interventional studies in AA. Clinicians have to choose from the limited available therapeutic options based on the extent of alopecia and possible side effects.

KEYWORDS : Alopecia Areata; TCA; Topical bimatoprost solution; systemic corticosteroids; intralesional corticosteroids; Puva; , immunotherapy, excimer laser, jak kinase inhibitor

AIM-

Seven patients having U/L or B/L AA of eyebrow were included in study to know the efficacy of 20%TCA application along with bimatoprost solution as topical application as a new modality of treatment where other medications like Topical corticosteroids, oral minipulse therapy of systemic corticosteroids intralesional corticosteroids, Puva, immunotherapy, excimer laser, jak kinase inhibitor were not giving promising results. Study was considered after taking proper consent from parents. It is found to be an effective and cheap technique.

METHODOLOGY

Patients were selected from Department of Dermatology out - patient clinics of Shadan Institute of Medical Sciences, Teaching Hospital and Research Centre attached to Shadan Institute of Medical Sciences with the permission from institutional ethical committee, the study was carried out. After briefing the merits and demerits of the treatments to the patient, a formal informed consent was taken and a proforma was filled by the patient for the collection of baseline data. All patients underwent a cleansing of eyebrows with alcohol swabs. Then 20% TCA was focally applied by using a sharpened wooden applicator and then we applied a topical antibiotic ointment. All the patients were advised to use topical bimatoprost solution twice daily for local application at home. Procedure was repeated after every 15th day on an out-patient basis. This treatment was continued for a period of 6 months and final outcome was measured after the last session. TCA application, before and after procedure photographs were taken.

Case 1- A baby boy of 10 years old attending dermatology OPD had gradual loss of both the eyebrow for 7 months along with alopecia areata in the scalp. Baby is a known case of atopy with no family history of alopecia, hypothyroidism. Pt was given 20% trichloro acetic acid application under 1:1 dilution with distilled water once in 15 days as sittings till 6 months (24 weeks). Patient was advised to apply bimatoprost solution daily There was a good improvement. Patient was kept for follow- up for any recurrence in future.

Case 2- A 2 and half year-old baby boy born to a hypothyroidism mother presented with sudden eyebrow loss for 2 months. No H/O atopy in the baby & family. Pitting of nails along with alopecia subtotalis of scalp was present. Patient was given 20% TCA under 1:1 dilution with distilled water for 15 days apart sitting along with regular bimatoprost solution topical application once daily. There was an excellent improvement with no recurrence after 24 weeks.

Case 3- 15 years old obese hypothyroid atopic female patient had a complaint of alopecia Subtotalis and Madarosis later after 2 years. She was given 12 sitting of 20% TCA application along with oral vitamin, topical bimatoprost solution as daily applicator, patient showed good improvement and kept for follow up.

Case 4- A 18-year-old male patient with Alopecia Universalis and Since 4 ½ year had tried all the modalities of treatment like oral corticosteroid, oral mini pulse therapy of systemic corticosteroids, oral tofacinib, intralesional corticosteroids showed mild response. He was given20% TCA application and topical bimatoprost solution daily for 6-8 months (14) sitting. Patient showed moderate improvement.

Case 5- A 8-years old baby boy had bilateral eyebrow hair loss with vitiligo, atopic features. Patient was kept on 20% TCA application and topical bimatoprost solution for 6 months. Pt had average improvement.

Case 6- A 54year-old male with bullous pemphigoid, mentally unstable and with B/L eyebrow loss not having any other associated atopy, hypothyroidism. Was kept on trial therapy of topical application of 20%TCAonce in 15 days for 6 months along with topical bimatoprost solution as daily applicator. Patient was improving and was under follow-up.

Case 7- A 57 years old male with alopecia areata of scalp for 8 months developed alopecia of eyebrows since a month was advised 20%TCA (trichloro acetic acid) application for once in 15 days for 6 months along with topical Benzyl Nicotinate, Vitamin K, Salicylic Acid IP, Alcohol (95%) IP containing solution for scalp and topical bimatoprost solution for both eyebrows showed good improvement.

DISCUSSION

Madarosis is characterized by either complete or partial loss

of eyebrow or eyelash hair. madarosis can cause significant distress to patients, necessitating recognition of potential associated underlying diseases and treatments. Aetiologies of madarosis are varied, and include autoimmune, endocrinologic, infectious, genetic, neoplastic, nutritional, and traumatic conditions. Madarosis can be classified as scarring or non-scarring, depending on the cause, prompt and accurate diagnosis is the first step in clinical management. Unfortunately, few standardized diagnostic pathways and treatment regimens exist in the management of eyebrow and eyelash alopecia, further underscoring the importance of early recognition and treatment Eyebrow and eyelash thinning and whitening can occur as a presentation of physiologic aging [1, 2]]Atopic dermatitis can present with loss of the lateral third of the eyebrows (Hertoghe sign) in up to 39% of patients, as well as eyelid dermatitis, though involvement of more than just the lateral third of the eyebrow is possible [1]. Although alopecia can be caused by chronic rubbing, eyebrow loss has also occurred in patients without a history of eyebrow manipulation [2] Eyebrow loss occurs during the secondary stage of syphilis and typically affects the lateral side of the eyebrows, known as the "omnibus sign" [3]. Acrodermatitis Enteropathica, an inherited disorder of abnormal zinc absorption, has also been shown to cause diffuse eyebrow and eyelash loss [4]. Eyebrows: no standard treatment. Successful reported treatments include baricitinib 4 mg/day [7], ILTA 2.5 mg/mL (0.5 mg to each eyebrow) [6], topical tofacitinib 2% gel twice daily [8], oral tofacitinib 15 mg [9,12], pulsed diode laser at 904 nm [11] Topical and intralesional steroids have long been utilized for eyebrow alopecia. Intralesional Triamcinolone acetonide (ILTA) (2.5 mg/mL; 0.5 mg to each eyebrow) can be injected every 4–6 weeks for a maximum of 6 months [5]. Moderate potency topical corticosteroids and topical minoxidil 5% (AU), application of topical 0.03% bimatoprost to the eyelid margin once daily for a year led to slight, moderate, or complete eyelash growth in about 70.3% of patients [10]. However, in another study of 26 AA patients, application of topical latanoprost for 4 months did not show statistically significant eyelash regrowth [5].

A similar lack of efficacy of latanoprost was seen in other experimental studies [5]. Bimatoprost ophthalmic solution 0.03% once daily was approved by the US FDA in 2008 for eyelash hypotrichosis and has been shown to increase eyelash pigmentation, length, and thickness [14]. Cosmetic treatments for eyebrow and eyelash alopecia include topicals to help regrow hairs such as copper peptides, as well as techniques to camouflage hair loss such as microblading, micro shading, and tattooing. Younger age at presentation was associated with regrowth, whereas presence or absence of other involved sites, personal or family histories of atopy, family history of alopecia, other autoimmune disease, or the use of topical steroid did not appear to affect prognosis. TCA (trichloro acetic acid) causes coagulative necrosis of the collagen in papillary and reticular dermis. (13,15) It takes a few days for the necrotic layer to slough off and re-epithelization of the skin. (16). Peeling with higher TCA concentrations is not recommended due to these potential complications.(18) Chemo exfoliation can potentially be utilized, acting as irritants and consecutively immunomodulators. Peels via therapeutic wounding provoke growth factors and cytokines that may induce hair regrowth[17].Topical prostaglandins such as bimatoprost and latanoprost have been used in AA.[5] In a recent RCT in adults, topical latanoprost 0.005% ophthalmic solution was found to be less effective but safer than topical betamethasone dipropionate 0.05% lotion in the treatment of localized AA.[10] Trichloroacetic acid (TCA) 35% and phenol 88% peels once in 3 weeks have been tried in multifocal patchy AA patients between 6 and 43 years of age and found to be efficacious with TCA showing higher efficacy and tolerability.[17]

Declaration Of Patient Consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patients had given their consent for their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed

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Conflict Of Interest: None declared.

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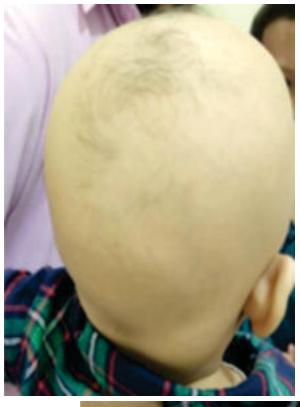
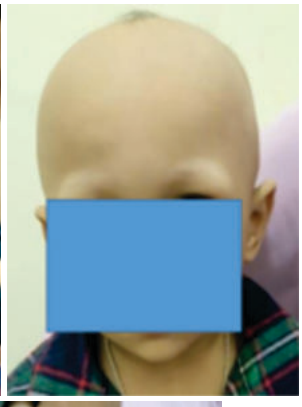
Case 1

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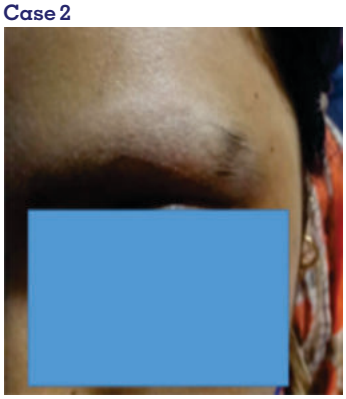
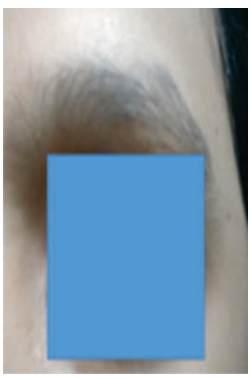

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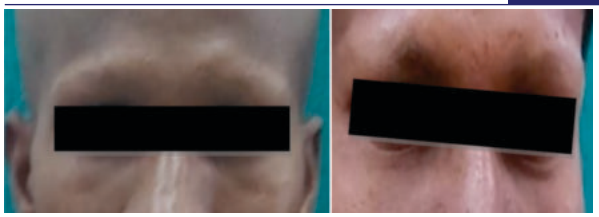
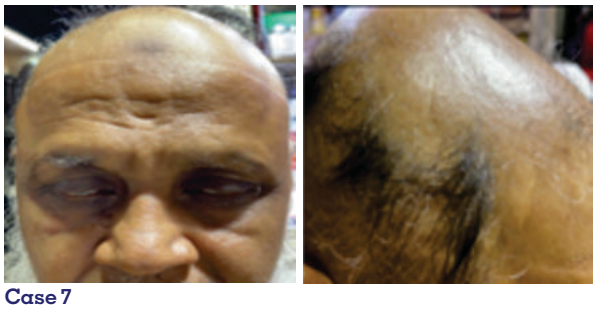


Case 4

Case 5 Case 6



Case 7

CONCLUSION

Management of AA is particularly challenging given the chronicity of the condition. It is crucial to evaluate the impact of the disease on the patients physical and emotional well-being, including issues like self-confidence, self-image, and acceptance by peers. Parental anxiety, frustration, guilt, and expectations must also be proactively managed to ensure an overall holistic management of the patient. AA is a chronic inflammatory disorder with a remitting and relapsing course. There are sparse interventional studies in AA. Clinicians have to choose from the limited available therapeutic options based on the extent of alopecia and possible side effects.

Limitations

There is a need for more interventional studies, especially RCTs to find out the efficacy and safety of various treatment modalities in the all age groups.

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