## Original Article:

# Prescription pattern of dermatologists for alopecia areata in Bangladesh: A cross-sectional survey.

**Md. Shah Zaman[1], Fatema Ahmed[2], Towhida Noor[3], Abul Kalam[4], Sharmin Jahan[5], Mohsena Akter[6]**

1. Assistant Professor, Dept. of Dermatology & Venereology, Z.H Sikder Women's Medical College
2. Associate Professor , Critical Care Medicine , BIRDEM General Hospital
3. Consultant Dermatologist, Matador Diagnostic and Wellness Center, Dhaka
4. Associate Professor, Tairunnessa Memorial Medical College
5. Assistant Professor, Dhaka Medical College
6. Associate Professor , Z.H Sikder women's Medical College

## Abstract

**Background:** Alopecia areata (AA) is a chronic, immune-mediated disease characterized by acute or chronic non-scarring hair loss, with heterogeneity in clinical manifestations ranging from patchy hair loss to complete scalp and body hair loss. Though before June 2022 there was no FDA-approved systemic medication for alopecia areata dermatologists prescribe a good number of topical and systemic agents for the treatment of alopecia areata (AA), and in Bangladesh all treatment modalities are not available and prescribed. **Methodology:** This cross-sectional survey was conducted on 120 dermatologists to see the prescription pattern in alopecia areata. **Results:** The responses of 120 dermatologists were analyzed. The most common treatments prescribed for AA were topical Steroids (91%), topical calcineurin inhibitors (88%), biotin (73%), Zn (73%) minoxidil (60%)tofacitinib (46%), methotrexate (3%), cryotherapy (2%), PUVA/NBUVB, anthralin. At the time of the survey, 46% of patients were being prescribed a combination of corticosteroids (23%), injectable corticosteroids(12%), and topical corticosteroids/topical calcineurin inhibitor. **Conclusions:** This analysis provides a snapshot of the different local and systemic treatment options currently being used in a real-world treatment setting.

**Keywords:** Alopecia areata; Cross-sectional survey; Treatment patterns.

## Introduction:

Alopecia areata is a common, nonscarring, autoimmune disease that can affect any hair-bearing area.[1] The exact pathophysiology of alopecia areata remains unknown. The most widely accepted hypothesis is that alopecia areata is a T-cell–mediated autoimmune condition that is most likely to occur in genetically predisposed individuals.[2] Alopecia areata has a reported incidence of 0.1-0.2%, with a lifetime risk of 1.7%.[3] The disease can begin at any age, but the peak incidence is between 20 and 50 years of age.[4] Both the sexes are equally affected and there is no racial variation reported.[5] Clinically, alopecia areata may present as a single well-demarcated patch of hair loss, multiple patches, or extensive hair loss in the form of total loss of scalp hair (alopecia totalis) or loss of entire scalp and body hair (alopecia universalis).[6] Histopathologically, alopecia areata is characterized by an increase in the number of catagen and telogen follicles and the presence of perifollicular lymphocytic infiltrate around the anagen phase hair follicles.[7] The condition is thought to be self-limited in the majority of cases, but in some cases, the disease has a progressive course and needs active treatment in the form of oral or topical therapeutic options.[8] Progressive alopecia

**Corresponding author**
Md. Shah Zaman, Assistant Professor, Dept. of Dermatology & Venereology, Z.H Sikder Women's Medical College, Email: drshahzaman@yahoo.com

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areata is associated with severe social and emotional impact.[9]

## Materials and Methods

The responses of a total of 120 dermatologists were included. This was an observational, multicenter, descriptive cross-sectional study. This study was self-administered questionnaires autocompleted by dermatologists working in Bangladesh. The questions were treatment of different stages of alopecia area with multiple treatments. Participating dermatologists were asked over the telephone, email and directly to fill out a standardized form of treatment on alopecia areata. Children and adults, all types of alopecia areata patients were included. Then asked to observe any side effects of prescribed medication. Consulting for alopecia areata first visit or a follow-up visit was from January to December 2022.

The study was conducted in accordance with local laws and regulations.

Statistical analyses were performed using Stata, version 11 (Stata Inc., College Station, TX, USA). All tests were two-tailed and p-values were considered statistically significant.

## Result

The responses of 120 dermatologists were analyzed. The most common treatments prescribed for Alopecia areata were topical corticosteroid (91%), topical calcineurin inhibitor (88%), oral biotin & zinc (73%), topical minoxidil (60 %), systemic steroid (46%), Tofacitinib (36%), intralesional triamcinolone acetonide (23 %), Methotrexate (3%) cryotherapy (2%).

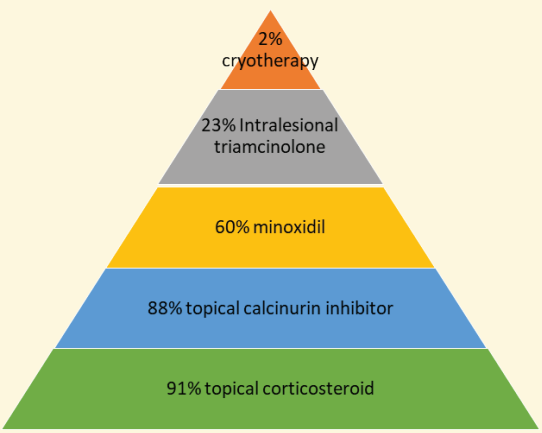


Figure 1: Topical Medication use for AA by dermatologists in Bangladesh.


Figure 2: Oral Medication use for AA by dermatologists in Bangladesh.

## Discussion

Alopecia areata occurs worldwide. The estimated prevalence is approximately 1 in 1000 people, with a lifetime risk of approximately 2 per cent. Both children and adults may develop alopecia areata, and the disorder occurs at similar rates in males and females. More than 80% show signs of the disease before age 40, and 40% experience symptoms by age 20.Steroids help control alopecia areata by reducing inflammation and suppressing the immune system, to stop the body from attacking the hair follicles. Topical corticosteroids with varying levels of efficacy have been used to treat alopecia areata. These include fluocinolone acetonide cream, fluocinolone scalp gel, betamethasone valerate lotion, and clobetasol propionate ointment.[10] Our study showed 91% of dermatologists treated with topical steroid,46% systemic steroid and 23% intralesional steroid with variable efficacy.Triamcinolone acetonide is the first-line therapy for adult patients with less than 50% scalp involvement. The preferred concentration for the scalp is 5 mg/mL and for the face and eyebrows it is 2.5 mg/mL.[11] The use of systemic corticosteroids for the treatment of alopecia areata is under much debate. The suggested dosages are 0.5-1mg/kg/day for adults and 0.1-1 mg/kg/day for children.[12] Treatment course ranges from 1-6 months, but prolonged courses should be avoided to prevent the side effects of corticosteroids. The side effects profile of corticosteroids in conjunction with the long-term treatment requirements and high relapse rates make systemic corticosteroids a more limited option.Minoxidil appears to be effective in the treatment of alopecia areata. Its mechanism of action has yet to be determined, but it is known to stimulate DNA synthesis in hair follicles and has a direct action on the proliferation and differentiation of the keratinocytes.[13] Sixty present dermatologists prescribed topical minoxidil for alopecia areata. Price et al reported an 11-patient study in which none of the patients had terminal hair growth in response to tacrolimus ointment 0.1 % applied twice daily for 24 weeks.[14] Emma Andrus in her recent study showed that combined with a low dosage of prednisone, methotrexate provided nearly complete

or complete hair regrowth in up to 31.2% of patients with alopecia areata.[15] In our study, 88 % of dermatologists used for patients. Methotrexate either alone or in combination with prednisolone has been used in the treatment of alopecia areata in various studies with variable success rates. Serum zinc levels are lower in patients with alopecia areata than in the control population in a study on 15 patients, hair regrowth was observed in 9 patients (67%) after oral zinc gluconate administration.[16] Eleven patients diagnosed with AA universalis or totalis were treated with oral tofacitinib.[17] Myungsoo Jun and Won-Soo LeeNineteen patients with AA were treated with cryotherapy successfully treated for 1 month.[18] Another observation is cryotherapy is used for only 3% of patients of alopecia areata. Baricitinib is an oral, reversible, selective JAK1/JAK2 inhibitor.On 13th June 2022, Baricitinib oral tablets were officially approved by the Food and Drug Administration as a systemic treatment for adult patients with severe Alopecia Areata.[19] Alopecia areata (AA) is a relapsing, chronic, immune-mediated disease characterized by nonscarring, inflammatory hair loss that can affect any hair-bearing site. AA clinical presentation is heterogeneous. Pathogenesis of Alopecia areata involves immune and genetic factors and several pro-inflammatory cytokines including interleukin-15 and interferon-γ, as well as Th2 cytokines, such as IL-4/IL-13, that signal through Janus kinase (JAK) pathway. JAK inhibition has been shown to stop hair loss and reverse alopecia. Baricitinib is a Janus kinase inhibitor that is approved to treat AA in several countries, based on results from two studies, BRAVE-AA1 and BRAVE-AA2. One study showed adults with at least 50% scalp hair loss were treated with baricitinib for 36 weeks.[20]

## Conclusions

This analysis provides a snapshot of the different local and systemic treatment options currently being used in a real-world treatment setting. Unfortunately, none of these treatments provides a sustainable, safe, and relapse-free solution, which leads to high treatment dissatisfaction rates and hence indicates a significant unmet need for new and advanced treatment options for patients with AA.

## Conflict of Interest

None

## Funding source

None

## Patient Consent

Taken

## IRB approval status

Not applicable

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