Hair Regrowth After Alopecia Areata

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Key points:

- Introduction
- Types / Severity Relevant to Regrowth
- Mechanism of hair loss
- Treatment approaches

Introduction

Alopecia areata (AA) is an autoimmune disorder characterized by temporary, non-scarring hair loss resulting from immune-mediated damage to hair follicles while preserving the follicles themselves. It typically presents as well-defined, round or oval patches of hair loss and can affect individuals of any age.[1,2] In some cases, the disease may also involve the nails.[3] Although alopecia areata is not life-threatening, it can have a significant psychological impact, leading to anxiety, depression, reduced self-esteem, and social withdrawal.[4]

Types and Severity Relevant to Hair Regrowth

The extent of hair loss in alopecia areata influences both disease severity and the likelihood of spontaneous hair regrowth. The major clinical subtypes include:

Alopecia areata (AA): Characterized by one or more well-defined patches of non-scarring hair loss on the scalp or other hair-bearing areas.

Alopecia totalis (AT): A more severe form of alopecia areata involving complete loss of scalp hair.

Alopecia universalis (AU): The most severe subtype, characterized by complete loss of hair on the scalp and the entire body.[5]

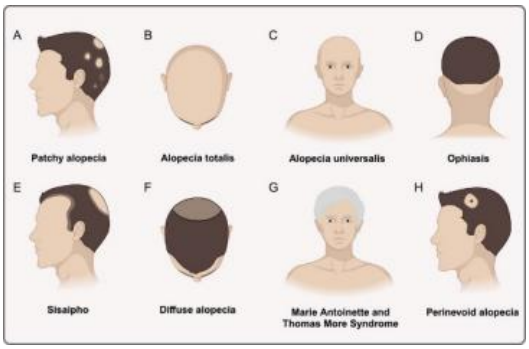


Figure 1- *Types of alopecia areata* [7]

Mechanism of Hair loss

The exact cause of alopecia areata is not fully understood, but current evidence suggests that it results from an autoimmune response targeting hair follicles. Certain triggering factors, such as viral infections, genetic susceptibility, or environmental influences, may disrupt the hair follicle's normal immune privilege, allowing immune cells to recognize follicular structures as foreign. Autoreactive $CD8^+$ $NKG2D^+$ T lymphocytes then attack the hair follicles, leading to premature interruption of the normal hair growth cycle and subsequent hair loss. Although alopecia areata was previously considered predominantly a type 1 inflammatory disorder, recent

studies indicate that type 2 and Th17-associated immune pathways also contribute to disease development and progression.[6]

Treatment Approaches

Early diagnosis and assessment using **trichoscopy** improve the accuracy of disease evaluation and help guide appropriate treatment.[6] Although treatment options for alopecia areata have historically been limited, recent advances have led to the development of targeted therapies, particularly **Janus kinase (JAK) inhibitors**.[6]

Baricitinib, an oral selective JAK1/JAK2 inhibitor, has demonstrated significant improvement in hair regrowth compared with placebo in patients with severe alopecia areata. Clinical trials, including the phase 3 **BRAVE-AA1** and **BRAVE-AA2** studies, showed favorable outcomes in patients aged 12 years and older after 36 weeks of treatment.[9] The recommended dose is **2 mg or 4 mg once daily**, depending on disease severity.[10]

Other systemic treatment options include corticosteroids, cyclosporine, methotrexate, and azathioprine, which are commonly used off-label in selected patients. Oral minoxidil may also be used as an adjunctive therapy, although evidence supporting its effectiveness remains limited. Current expert guidelines recommend selecting treatment based on disease severity, patient characteristics, safety profile, and expected duration of therapy.[8]

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   Figure 1 source: Types of alopecia areata (adapted from this review).
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