

Review on Alopecia Areata

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Abstract: *Alopecia areata (AA) is an autoimmune disorder characterized by non-scarring hair loss due to immune-mediated attack on hair follicles. The disease affects individuals of all ages and has a significant psychological impact. This review aims to provide a comprehensive analysis of AA, including its historical background, pathophysiology, and treatment options. The pathogenesis of AA involves the collapse of hair follicle immune privilege, activation of autoreactive CD8+ T cells, and increased expression of pro-inflammatory cytokines such as interferon-gamma (IFN- γ) and interleukin-15 (IL-15). Genetic predisposition plays a crucial role, with susceptibility loci identified in immune-related genes, including PTPN22 and IL2RA. Environmental factors such as stress and infections are also implicated in triggering the disease. Current treatment strategies include synthetic and herbal approaches. Corticosteroids and immunomodulators remain the mainstay of therapy, while Janus kinase (JAK) inhibitors, such as tofacitinib and baricitinib, have emerged as promising targeted therapies. Herbal treatments, including ginseng, rosemary, and curcumin, offer alternative options with anti-inflammatory and antioxidant properties. Despite advancements in treatment, AA remains a challenging condition with variable response to therapy and a high relapse rate. Further research is needed to elucidate the disease mechanisms and develop more effective, personalized treatment strategies. This review highlights recent developments in AA research and underscores the need for continued exploration of novel therapeutic approaches to improve patient outcomes.*

Keywords: Alopecia Areata, autoimmune disorder, hair follicle immune privilege, Janus kinase inhibitor, corticosteroid, herbal therapy, immunomodulation

