Alopecia Areata
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Definition
Alopecia areata (AA) is a benign disease characterized by recurrent, nonscarring form of hair loss affecting any hair bearing area. It most commonly affects the scalp but can involve other areas too.

Age and Sex
AA can affect any age (1), though the peak age is between 15-29 years. Though data varies, in one big study an equal male: female ratio was found (2)

Etiopathogenesis
The exact etiopathogenesis of AA is not known. However the hypothesis that is most widely believed is that it is a T-cell mediated autoimmune condition that usually occurs in genetically predisposed people (3). Factors that favor autoimmunity include the finding of autoantibodies, valuable effect of T-cell subtype depletion on hair, and the ability to induce remission by grafting involved areas onto immunoincompetent animals. Factors that support a genetic basis include a positive family history in those affected (4), its occurrence in twins and association with Down’s syndrome. Other proposed etiologic theories are low circulating levels of the neuropeptide calcitonin gene-related peptide, cytokines like IL-1 and TNF and a viral agent.

Histology
To make a histological diagnosis one should prefer horizontal sections so as to examine multiple hair follicles at various levels. Important findings include a peribulbar lymphocytic infiltrate (most characteristic), an increase in vellus hairs and pigment incontinence in the hair bulb.

Clinical Features
Patients suffering from AA have an erratic natural history regarding duration and extent of the disease. Though it is asymptomatic in the majority, few patients experience pruritus or pain in the affected area (5). Most commonly affecting the scalp, it can also involve the beard, eyebrows and the extremities. Characteristic features include the presence of smooth, slightly erythematous or normal-colored alopecic patches, easy pluckability of hair along the edge of a patch and exclamation point hairs (hairs tapered near proximal end). Nail involvement (e.g., pitting, Beau lines, onychorrhexis, koilonychia, leukonychia) can also be seen in some cases.

Types
AA can be localized (<50% involvement) or extensive (>50% involvement). Hair loss can be diffuse over whole scalp patchily (diffuse AA), involve one spot (AA unilocularis) or many spots (AA multilocularis), involve beard only (AA barbae), be complete over the scalp (AA totalis) or complete over whole of body (AA universalis).

Associated conditions
Commonly associated conditions include atopic dermatitis, vitiligo, clinically evident thyroid disease, collagen-vascular diseases like lupus erythematosus, diabetes mellitus, Down syndrome and psychiatric problems.

Diagnosis
Differentiation from trichotillomania, tinea capitis and telogen effluvium is not difficult usually. Classical clinical features suffice to make a diagnosis. However sometimes dermoscopy (which shows yellow dots) or histopathology is needed to confirm.
Management
Since AA is a benign condition, treatment is not mandatory. Moreover treatment also depends on the extent of the illness since spontaneous remission rate is high in those with less than 40% scalp hair loss (making treatment less mandatory) and low in those with greater than 40% involvement.

Topical Treatment

- **Corticosteroids:** Such therapy includes intralesional injections or topical application. *Intralesional steroids* are the first-line treatment in localized conditions. Injections using a 3-mL syringe and a 30-gauge needle are administered intradermally. Triamcinolone acetonide is used most commonly. A concentration of 5 mg/mL is usually sufficient on the scalp. Less than 0.1 mL is injected per site. Injections are administered every 4-6 weeks. In responsive patients regrowth usually is seen within 4-6 weeks. Hair growth may persist for 6-9 months after a single injection. Treatment with *topical steroids* can be useful in children not tolerating injections and include fluocinolone acetonide cream and betamethasone dipropionate cream.
- **Minoxidil:** Minoxidil 5% solution has been found to be effective in the treatment of AA in patients with extensive disease.
- **Immunotherapy:** Topical immunotherapy using pollen allergens like squaric acid dibutylester and diphencyprone (6) acts by eliciting an allergic contact dermatitis. In patients with severe alopecia areata (>50% involvement) acceptable regrowth varies from 22-68%.
- **Anthrallin:** So far studies with topical anthralin have shown less efficacy and more toxicity.

Systemic Treatment

- **PUVA:** Both systemic and topical Psoralen and UV-A have been used but were not found to be an effective long term therapy due to a high relapse rate.
- **Steroids:** Systemic prednisone is not considered an agent of choice due to adverse effects.
- **Cyclosporine:** Though useful, it has not found favor due to its high recurrence rate and adverse effect profile.
- **Other agents like tacrolimus, dapsone, methotrexate and interferon have been tried but are not yet approved.**
- **Other Treatment Modalities:** include biological agents (like adalimumab, etanercept), nitrogen mustard, acupuncture, nonpharmacologic methods (dermatography, hair pieces).
Prognosis
In most patients with localized AA hair, grows back after a few months to a year (5). Patients with localized AA have a better prognosis than those with extensive involvement. Those having alopecia totalis and universalis have a poorer prognosis with high failure rate. AA though benign can sometimes cause great psychosocial stress.

References

Conflict of Interest: None. The picture has been kindly provided by Dr. Sarosh A Khan, MD.

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