## Alopecia areata treatment

By Andrea Paola Caro-Muñiz, MD, Eduardo Michelen-Gomez, MD, and Karina J. Cancel-Artau, MD

<table>
<thead>
<tr>
<th>Medication</th>
<th>Dosage form and strength</th>
<th>Frequency</th>
<th>Routine labs</th>
<th>Side effects</th>
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<tbody>
<tr>
<td><strong>Topical and intralesional therapy</strong></td>
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<tr>
<td>Corticosteroids (topical and intralesional)</td>
<td>Topical: Potent and superpotent topical corticosteroids</td>
<td>Topical: Apply daily for at least 6-12 weeks up to a maximum of 3-6 months.</td>
<td>None</td>
<td>Purpura, telangiectasia, striae, hypertrichosis, acneiform or rosacea-like eruptions, allergic contact dermatitis, tachyphylaxis</td>
<td>FDA approved</td>
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<tr>
<td></td>
<td>Intralesional: Initially 2.5-5mg/mL of triamcinolone acetonide (in subsequent doses, should not be 10 mg/mL or greater) to be injected as 0.1mL per site in solitary patch with 1cm between injection sites</td>
<td>Intralesional: as needed.</td>
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<tr>
<td>Tacrolimus: calcineurin inhibitor</td>
<td>Ointment (0.1%)</td>
<td>Apply twice daily to scalp, eyebrow, or beard</td>
<td>None</td>
<td>Application site irritation, stinging, burning, or itching, folliculitis, acne, headache, upper respiratory tract infections, nausea</td>
<td>No FDA approval for use in alopecia areata patients</td>
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<tr>
<td>Minoxidil</td>
<td>Foam (5%) and solution (2%, 5%)</td>
<td>Apply twice daily to scalp</td>
<td>None</td>
<td>Contact dermatitis, pruritus, skin irritation, hypertrichosis</td>
<td>FDA approved for ages 18 and older</td>
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<tr>
<td>Ruxolitinib: JAK1 and JAK2 inhibitor</td>
<td>Cream (1.5%)</td>
<td>Apply twice daily to scalp</td>
<td>Hepatitis panel and tuberculosis testing at baseline</td>
<td>Black box warning(^1,2^) Nasopharyngitis, bronchitis, ear infection, tonsillitis, rhinorrhea, urticaria, folliculitis, diarrhea, eosinophilia, thrombocytopenia, application site acne/pruritus/erythema, headache, urinary tract infections, pyrexia</td>
<td>No FDA approval for use in alopecia areata patients</td>
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<tr>
<td>Tofacitinib: JAK1, JAK2, and JAK3 inhibitor</td>
<td>Cream/lotion (2%)</td>
<td>Apply twice daily to scalp</td>
<td>None</td>
<td>Adults: Scalp irritation, hypercholesterolemia, folliculitis Children: Leukopenia, elevated liver enzymes</td>
<td>No FDA approval for use in alopecia areata patients</td>
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<td>Topical prostaglandin analogs (latanoprost, bimatoprost): PGF2α agonist</td>
<td>Bimatoprost ophthalmic solution (0.03%), latanoprost ophthalmic solution (0.005%)</td>
<td>Apply once daily to upper eyelash line</td>
<td>None</td>
<td>Burning sensation (eyelid), eye swelling, eyelid irritation and edema, eyelid pruritus, iris hyperpigmentation, lacrimation increased, madarosis and trichorrhexis, deepening of the eyelid sulcus, rash limited to the eyelids and periorbital region, periorbital skin discoloration, and blurred vision</td>
<td>Bimatoprost: FDA approved for ages 16 and older to treat hypotrichosis of the eyelashes by increasing their growth including length, thickness, and darkness Latanoprost: No FDA approval for use in alopecia areata patients</td>
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## Contact immunotherapy:
- **Medication**: Diphenylcyclopropenone (DPCP) and squaric acid dibutyl ester (SADBE)
- **Dosage form and strength**: Diphenylcyclopropenone (DPCP): 2% topical solution
  - Squaric acid dibutyl ester (SADBE): 2%-3% topical solution
- **Frequency**: No consensus; at least once every 4 weeks or less than 2 weeks if possible
- **Routine**: None
- **Side effects**: Mild to moderate eczematous reactions, severe eczema, generalized eczema in nontreated and treated sites, lymphadenopathy, influenza-like symptoms, pigmentary changes, anaphylactoid reaction, hair curling
- **FDA approval**: No FDA approval for use in alopecia areata patients

## Systemic therapy

### Prednisolone (or prednisone)
- **Medication**: 5 mg, 10 mg, 15 mg, or 30 mg Tab
- **Dosage form and strength**: 5 mg, 10 mg, 15 mg, or 30 mg Tab
- **Frequency**: >13 yo: 0.4 to 0.6 mg/kg/day with gradual taper over more than 12 weeks
- **Routine**: Baseline: CMP, lipid panel, HBV, HCV, TB, and DEXA scan if indicated
  - Follow-up: Week 4: BMP and lipid panel, then every 12 weeks
- **Side effects**: Adrenal insufficiency, Cushing syndrome, diabetes mellitus, electrolytes imbalance, hypertension, osteoporosis, glaucoma, cataracts, growth suppression, increased intracranial pressure, hirsutism, weight gain, emotional lability, GI distress, muscle atrophy, impaired wound healing, skin atrophy, edema, menstrual irregularities, headache
- **FDA approval**: No FDA approval for use in alopecia areata patients

### Methotrexate
- **Medication**: 2.5 mg tablet, 25 mg/mL injection solution (0.1 mL equivalent to 2.5 mg tab)
- **Dosage form and strength**: 2.5 mg tablet, 25 mg/mL injection solution (0.1 mL equivalent to 2.5 mg tab)
- **Frequency**: >18 yo: 15 to 20 mg weekly
  - <18 yo: 0.4 mg/kg/week
- **Routine**: Baseline: CBC, LFTs, RFTs, HBV, HCV, TB, HIV, HCG, and PFTs if indicated
  - Follow-up: CBC weekly for 2-4 weeks and 1 week after each major dose increase, then every 2 weeks for 1 month and every 2-3 months while on stable dose
  - RFTs every 6-12 months
  - Annual TB
  - HCG as indicated
- **Side effects**: Pregnancy category X. Interstitial pneumonitis, pulmonary fibrosis, ulcerative stomatitis, GI disturbance, GI ulceration and bleeding, malaise, fatigue, fever, dizziness
  - Risk of infection
  - Risk of cutaneous and lymphoproliferative malignancy
  - Photosensitivity, alopecia Labs: transaminitis, cytopenias
- **FDA approval**: No FDA approval for use in alopecia areata patients
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<td>Cyclosporine</td>
<td>25 mg, 50 mg, 100 mg capsules</td>
<td>&gt;18yo: 3 to 5 mg/kg/day for up to 12 months</td>
<td>Baseline: CBC, CMP, hepatitis panel, fasting lipid panel, pregnancy test, UA, Mg, uric acid, TB, and blood pressure Follow-up: Week 4 and 8: CBC, CMP, fasting lipid panel, UA, Mg, blood pressure Week 12 and every 3 months: CBC, CMP, fasting lipid panel, UA, Mg, uric acid, and blood pressure</td>
<td>Pregnancy category C. Renal dysfunction, hepatotoxicity, tremor, hirsutism, hypertension, gum hyperplasia, nausea, vomiting, headache, paresthesia, edema, arthralgia, flushing, dizziness, immunosuppression, electrolyte abnormalities, diabetes mellitus, hemolytic anemia, malignancy, seizures, encephalopathy, posterior reversible encephalopathy syndrome, neurotoxicity, hypersensitivity reaction, pancreatitis, depression</td>
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<td>Baricitinib: JAK1 and JAK2 inhibitor</td>
<td>1 mg, 2 mg, 4 mg tablets</td>
<td>2 mg tablet orally once daily. May scale therapy to 4 mg daily if response not adequate.</td>
<td>Baseline: CBC, LFTs, RFTs, viral hepatitis panel, TB. Follow-up: Week 4 and 8: CBC, LFTs, RFTs. Week 12: CBC, LFTs, RFTs, lipid panel. Every 3 months: CBC, LFTs, RFTs, lipid panel. Annual TB</td>
<td>Black box warning¹,² Gastrointestinal perforation, hypersensitivity reactions (urticaria, angioedema, rash), upper and lower respiratory tract infections, headache, acne, hyperlipidemia, creatine phosphokinase increase, urinary tract infections, liver enzyme elevations, folliculitis, fatigue, nausea, genital Candida infections, anemia, neutropenia, lymphopenia, abdominal pain, herpes zoster, and weight increase</td>
<td>FDA approved for adult patients (18 years and older) with severe alopecia areata</td>
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<td>Ritlecitinib: JAK3 and tyrosine kinase inhibitor</td>
<td>50 mg capsule</td>
<td>One capsule orally once daily.</td>
<td>Baseline: CBC, LFTs, RFTs, viral hepatitis panel, TB. Follow-up: Week 4: CBC; Periodic follow-up: CBC, LFTs, RFTs; Annual TB</td>
<td>Black box warning¹</td>
<td>FDA approved for adults and adolescents 12 years and older with severe alopecia areata</td>
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² Anemia, neutropenia. Increase in total cholesterol, LDL cholesterol, triglycerides.

**References:**


