Topical corticosteroids for atopic dermatitis

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Clinical question

What are the risks and benefits of using topical corticosteroids for atopic dermatitis in children and adults?

Bottom line

While evidence is limited, topical steroids are effective against atopic dermatitis and efficacy likely increases with potency. Use once daily seems as effective as twice daily. Treatment 2 days per week of areas with frequent recurrent flares will help about 60% avoid a flare versus about 30% using a placebo over 16 weeks. Topical corticosteroids are well tolerated for up to 6 weeks. Long-term harms are not known.

Evidence

Results are statistically significant unless indicated. Four systematic reviews from 2017 to 2023 were identified.[1-4]

- Topical corticosteroid versus vehicle or moisturizer.
  - -A meta-analysis of 12 RCTs (N=2224 children) found 65% responded to topical corticosteroids (all types combined) versus 32% to vehicle or moisturizer; results were not compared statistically.[1]
  - -A review of 4 RCTs (N=718) found 28% of patients using 0.005% to 0.05% fluticasone cream for prevention 2 days per week had 1 or more flare over 16 to 20 weeks, compared to 61% with vehicle (number needed to treat [NNT]=3).[2] Another review reported similar findings.[3]
- Response to lower- versus higher-potency formulations.
  - -A review compared responses to potencies classified as mild (1% hydrocortisone), moderate (0.2% hydrocortisone valerate), high (0.1% betamethasone valerate), and very high (0.05% clobetasol propionate).[3]
    - —Marked improvement was reported at 1 to 5 weeks among 34% using mild formulations versus 52% using moderate (4 RCTs, N=449; NNT=6), and among 39% mild versus 71% high (9 RCTs, N=458; NNT=4).[3]
    - —Results were mixed for moderate- or high-potency steroids versus more potent steroids[3]: With between-participant trials, no difference was reported at 1 to 5 weeks. With same-participant trials, high potency appeared more effective but statistics were not interpretable. A review using a US classification system of 7 potencies reported gradual increases in efficacy as potency increased but comparisons were indirect and statistics were not provided.[4]
- Application once versus twice daily using same steroid.
  - -No difference was reported (5 RCTs, N=903).[3]
- Limited information on short-term adverse events (2 to 6 weeks).
  - -Skin thinning was reported in less than 1% on placebo or steroid (35 RCTs, N=3576).[3] Limitations included too-short RCTs, poor reporting, and difficulty measuring adverse effects on diseased or thickened skin.[3]
  - -In normal skin, mean epidermal thickness loss was reported as 0% with mild steroids versus 26% with very potent steroids (10 studies, patients without eczema).[5]

Context

- Potency classifications are inconsistent.[6]
- Tacrolimus 0.1% ointment is at least equivalent to moderate-potency topical corticosteroids.[7]

Implementation

Atopic dermatitis is a relapsing inflammatory skin disease, commonly diagnosed in children. Topical treatments are recommended at least daily to increase time between flares[2] and possibly reduce severity.[2,8] There is no evidence for superiority of one moisturizer over another.[2,8] Short baths with soap-free cleanser twice daily followed by moisturizer improve symptoms in children.[9] There is no single optimal topical corticosteroid regimen but a stepwise increase in potency is reasonable.[8] Tacrolimus is an alternate agent.[7] If response is inadequate, consider referral to dermatology for systemic agents.[8]

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Competing interests
None declared

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