Cochrane for Clinicians

Putting Evidence Into Practice

Strategies for Topical Corticosteroid Use in Children and Adults With Eczema

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Clinical Question

Which strategies for using topical corticosteroids in the treatment of eczema increase effectiveness and avoid adverse effects?

Evidence-Based Answer

High- and medium-potency topical corticosteroids increase treatment success compared with low-potency topical corticosteroids, but there is no difference in effectiveness between high- and medium-potency topical corticosteroids. (Strength of Recommendation [SOR]: C, limited-quality disease-oriented evidence.) Application of topical corticosteroids once daily is probably as effective as twice daily. Weekend therapy (i.e., application on two consecutive days per week) likely prevents eczema relapses without an increased risk of adverse effects.[1] (SOR: B, inconsistent or limited-quality patient-oriented evidence.)

Practice Pointers

Eczema, also known as atopic dermatitis, is a chronic inflammatory skin condition that is common worldwide and has a significant impact on quality of life. It affects up to 20% of children and 5% of adults.[1] Topical corticosteroids are the most commonly prescribed treatment, and prescribing patterns vary widely in the United States.[2] The authors of this review sought to identify the most effective strategies for topical corticosteroid use to treat eczema in adults and children, including different potencies, frequencies, and techniques of application. They also identified potential adverse effects.

The Cochrane review included 104 randomized controlled trials and 8,443 participants in several separate meta-analyses.[1] Most were conducted in high-income countries over a short period, ranging from one to six weeks. Primary outcomes were clinician-assessed improvement in signs of eczema using scaled instruments and clinician-reported local adverse effects (mainly thinning of the skin). Secondary outcomes were patient-reported symptoms and systemic adverse effects (i.e., abnormal cortisol levels).

Although several validated instruments for grading eczema severity are available, 62 trials reported the primary outcome using investigator global assessment scores on a 4-, 5-, or 6-point scale of eczema severity, with lower numbers indicating milder disease.[1] To compare the effectiveness of different topical corticosteroid strategies, the authors pooled data from studies that used investigator global assessment scales and created a dichotomous outcome of treatment success (i.e., cleared or markedly improved by investigator global assessment) vs. not successful (i.e., all other categories). Examples of topical corticosteroids used in the studies included hydrocortisone 0.5% to 2.5% cream/ointment (low potency), desonide (Desowen) 0.05% to 0.1% cream/ointment (medium potency), triamcinolone 0.1% cream/ointment (high potency), and clobetasol 0.05% cream/ointment (very high potency).

Medium-potency topical corticosteroids were more effective than low-potency corticosteroids (four trials; n = 420; number needed to treat [NNT] = 6; 95% CI, 4 to 12). No adverse effects were reported in either group. High-potency topical corticosteroids were more effective than low-potency corticosteroids (nine trials; n = 392; NNT = 3; 95% CI, 2.4 to 5.7). A comparison of high-potency and medium-potency topical corticosteroids showed no significant difference in treatment success (15 trials; n = 1,053; odds ratio [OR] = 1.33; 95% CI, 0.93 to 1.89). A comparison of very high-potency and high-potency topical corticosteroids showed no significant difference (three trials; n = 216; OR = 0.53; 95% CI, 0.13 to 2.09). When reported, low-certainty evidence demonstrated that the rates of local and systemic adverse effects were low across all comparison groups. For the secondary outcome of patient-reported symptoms, there were few data for meta-analysis; few studies reported this outcome, but data generally favored high- and medium-potency topical corticosteroids over low-potency topical corticosteroids.

In trials that compared the frequency of topical corticosteroid use, there was no significant difference between a twice-daily and once-daily application for clinician-reported investigator global assessment (15 trials; n = 1,821; OR = 0.97; 95% CI, 0.68 to 1.38) and patient-reported symptoms (two trials; n = 300; OR = 1.91; 95% CI, 0.62 to 5.83). The authors compared weekend therapy (i.e., treatment over two consecutive days each week) with no topical corticosteroid use or a reactive application when a flare-up was present for

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CME This clinical content conforms to AAFP criteria for CME. See CME Quiz on page 127.

the prevention of eczema relapses following a two- to four-week stabilization phase. Clinician-reported data showed a lower risk of relapse with weekend therapy (seven trials; n = 1,149; NNT = 3; 95% CI, 2.6 to 4.0). Patient-reported data showed better response to weekend therapy (one trial; n = 343; NNT = 2.5; 95% CI, 1.6 to 4.4). No adverse effects were reported in the trials analyzing weekend therapy.

Although the trials included in the meta-analysis encompassed all eczema severity levels, most trials were limited to participants with moderate or severe eczema, defined using one of several standard diagnostic criteria; this may limit applicability to patients with mild eczema. Few trials used a validated instrument recommended for assessing eczema severity, such as the Eczema Area and Severity Index (EASI) or the Objective SCORing Atopic Dermatitis (SCORAD) tool. The lack of standardization of investigator global assessment to assess eczema severity may limit the quality of data.[3] The evidence for safety and adverse effect reporting was methodologically inconsistent and of relatively short duration. The American Academy of Dermatology (AAD) recommends a twice-daily application of topical corticosteroids for the treatment of eczema but states that once-daily application may be sufficient.[4] The National Institute for Health and Care Excellence (NICE), which specifically addresses eczema in children, recommends once- or twice-daily application.[5] AAD and NICE recommend weekend therapy to prevent relapse in those with frequent disease flare-ups.[4,5] This Cochrane review supports current practice guidelines and provides additional guidance for selection of topical corticosteroid potency.

Editor's Note: The NNTs and related CIs reported in this Cochrane for Clinicians were calculated by the authors based on raw data provided in the original Cochrane review.

The practice recommendations in this activity are available at https://www.cochrane.org/CD013356.

The opinions and assertions expressed herein are those of the authors and do not reflect the official policy or position of the U.S. Air Force, U.S. Department of Defense, or the U.S. government.

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Guaiac-Based FOBTs vs. FITs for Colorectal Cancer Screening in Average-Risk Adults

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Clinical Question

Are fecal immunochemical tests (FITs) superior to guaiac-based fecal occult blood tests (gFOBTs) when screening individuals at average risk for colorectal cancer?

Evidence-Based Answer

FITs are more likely than gFOBTs to detect colorectal cancer or advanced adenomas in individuals at average risk.[1] (Strength of Recommendation = A, consistent, good-quality patient-oriented evidence.)

Practice Pointers

In 2019, colorectal cancer was the fourth most common cancer in the United States and was the fourth highest cause of cancer-related mortality.[2] Screening with a gFOBT or FIT can find colorectal cancer during the presymptomatic phase or detect advanced adenomas, potential precursors to colorectal cancer. Early identification leads to easier treatments and lower mortality.[1] The authors of the review sought to compare the accuracy of gFOBTs vs. FITs for population-based screening for colorectal cancer and advanced adenomas in individuals at average risk.

The Cochrane review included 63 high-quality studies and more than 3.7 million patients older than 40 years.[1] The included studies used a variety of methodologies, controls, and comparisons, which led the authors to analyze them using two primary constructs. Studies in which participants received both a fecal test and a colonoscopy were termed reference standard: all. Studies that used a sequential screening method in which only a positive fecal screening was followed by colonoscopy were termed reference standard: positive. The authors only included studies that used colonoscopy as the reference standard.

In the reference standard: all analysis (n = 126,378), FIT screening was more sensitive at detecting colorectal cancer and advanced adenomas compared with gFOBTs. There was no difference in specificity, meaning gFOBTs and FITs had similar false-positive rates. The reference standard: positive analysis (n = 2,624,005) found FITs to be superior to gFOBTs at accurately identifying patients with colorectal

cancer. In this analysis, FITs resulted in more follow-up colonoscopy than gFOBTs, with a specificity of 94% vs. 98%, respectively. Although FITs demonstrated superior sensitivity, it is important to recognize that sensitivity rates for both screening tests are low, particularly for the detection of advanced neoplasia. *Table 1* summarizes the findings of these meta-analyses.

Additional characteristics of FOBTs are relevant in the overall context of cancer screening. Ideal gFOBT screening requires the collection of two fecal samples from three consecutive bowel movements, whereas FIT screening requires only one sample. FIT screening can provide quantitative results that allow for adjusting cut-off values or potentially triaging positive results so that patients with more bleeding are able to get a colonoscopy earlier. FIT screening does not require any alteration in diet before testing.

TABLE 1

Diagnostic Accuracy of gFOBTs Compared With FITs

Method of findings	Number of studies (participants)	Sensitivity % (95% CI)	Specificity % (95% CI)
Meta-analysis 1: participants received stool test and colonoscopy			
gFOBT: advanced neoplasia	11 (17,622)	15 (12 to 20)	94 (92 to 96)
FIT: advanced neoplasia	16 (49,081)	33 (27 to 40)	93 (90 to 95)
Meta-analysis 1: participants received stool test and colonoscopy			
gFOBT: colorectal cancer	9 (17,340)	39 (25 to 55)	94 (91 to 96)
FIT: colorectal cancer	13 (42,335)	76 (57 to 88)	94 (87 to 97)
Meta-analysis 2: participants received colonoscopy if stool test was positive			
gFOBT: colorectal cancer	12 (1,349,890)	59 (55 to 64)	98 (98 to 99)
FIT: colorectal cancer	10 (1,274,115)	89 (85 to 92)	94 (92 to 95)

FIT = fecal immunochemical test; gFOBT = guaiac-based fecal occult blood test.

Colon cancer screening is recommended for all adults in the United States, beginning at 50 years of age; some guidelines recommend starting at 45 years.[3,4] FITs and gFOBTs are among the recommended options for colorectal cancer screening. Alternative methods of screening, including colonoscopy, computed tomography colonography, and stool DNA-FITs, were not considered in this direct comparison of FITs vs. gFOBTs. Positive screening tests for fecal occult blood must be followed by colonoscopy regardless of the stool test chosen. Patient preference, life expectancy, health system resources, local costs, and logistics should be considered when making colon cancer screening decisions.

The practice recommendations in this activity are available at https://www.cochrane.org/CD009276.

The opinions or assertions contained herein are the private views of the authors and are not to be construed as official or as reflecting the views of the U.S. Department of Defense or the Uniformed Services University of the Health Sciences.

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