



Q/What is the most effective topical treatment for allergic conjunctivitis?

EVIDENCE-BASED ANSWER

A | **TOPICAL ANTIHISTAMINES AND TOPICAL MAST CELL STABILIZERS** appear to reduce conjunctival injection and itching effectively. Topical nonsteroidal anti-inflammatory drugs (NSAIDs) are also effective, but may sting on application (strength of recommendation: **B**, meta-analysis of randomized controlled trials [RCTs]).

Both of these treatments relieve redness and itching

A 2004 systematic review of 40 RCTs (total N not provided) assessed the efficacy of topical treatment with mast cell stabilizers and antihistamines, comparing each with the other and placebo.¹ Eleven trials that included 899 children and adults compared mast cell stabilizers (sodium cromoglycate, nedocromil, and lodoxamide tromethamine) with placebo. Follow-up periods ranged from 4 to 9 weeks.

Because of study heterogeneity, a random-effects model was used and showed that topical mast cell stabilizers relieved symptoms (ocular itching, burning, and lacrimation) 4.9 times more effectively than placebo (95% confidence interval [CI], 2.5-9.6). Possible publication bias was cited as a limitation.

In the same systematic review, 9 RCTs with 313 patients compared topical antihistamines (levocabastine, azelastine hydrochloride, emedastine, and antazoline phosphate) with placebo. Signs and symptoms (itching, redness, burning, and swelling) were graded using symptom severity scales. Follow-up ranged from 30 minutes

to 24 hours. A meta-analysis wasn't possible because most studies didn't tabulate the mean scores and error associated with these scores. Most individual studies, however, showed improvement in the cardinal symptom of itchiness.

Finally, 8 RCTs compared topical mast cell stabilizers (sodium cromoglycate, lodoxamide, and nedocromil sodium) with levocabastine, a topical antihistamine. Two RCTs with 74 patients had follow-up periods of 15 minutes to 4 hours; the remaining 6 RCTs with 473 patients had follow-up periods of 14 days to 4 months. Subjective scoring of symptoms was done in 7 of the 8 studies.

Scores between treatment groups were reported as not statistically significant in the 6 longer-term studies. Meta-analysis wasn't possible because most studies didn't tabulate the mean scores and error associated with measures. The 2 short-term studies reported a statistically significant reduction in itching and redness ($P < .05$) in patients treated with the antihistamine (data not provided).

NSAIDs relieve itching but may sting when applied

A 2007 meta-analysis of 8 RCTs compared topical NSAIDs (ketorolac, diclofenac, aspirin, or steroid) with placebo for treating isolated allergic conjunctivitis in 712 children and adults.² Primary outcomes were measured as subjective reductions in conjunctival injection and itching measured at 2 to 6 weeks using a 0-to-3 severity scale.

Topical NSAIDs produced significantly greater relief of conjunctival itching (4 trials,

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N=231; mean difference [MD]=-0.54; 95% CI, -0.84 to -0.24) and conjunctival injection (4 trials, N=208; MD=-0.51; 95% CI, -0.97 to -0.05). NSAIDs weren't superior to placebo in treating other ocular symptoms of eyelid swelling, ocular burning, photophobia, or foreign body sensation, and they had a higher rate of stinging on application (odds ratio=4.0; 95% CI, 2.7-5.9).

Guideline recommends topical antihistamines or mast cell stabilizers

The American Academy of Ophthalmology's 2012 evidence-based guideline recommends treating allergic conjunctivitis with topical antihistamines (Level A-1 evidence, defined as important evidence supported by at least one RCT or a meta-analysis) and using topical mast cell stabilizers if the condition is recurrent.³ **JFP**

References

1. Owen CG, Shah A, Henshaw K, et al. Topical treatments for seasonal allergic conjunctivitis: systematic review and meta-analysis of efficacy and effectiveness. *Br J Gen Pract.* 2004;54:451-456.
2. Swamy BN, Chilov M, McClellan K, et al. Topical non-steroidal anti-inflammatory drugs in allergic conjunctivitis: meta-analysis of randomized trial data. *Ophthalmic Epidemiol.* 2007;14:311-319.
3. American Academy of Ophthalmology. Conjunctivitis Summary Benchmarks for Preferred Practice Pattern Guidelines. American Academy of Ophthalmology Web site. Available at: <http://one.aao.org/summary-benchmark-detail/conjunctivitis-summary-benchmark--october-2012>. Accessed October 18, 2013.