



Antihistamines for allergic rhinosinusitis: 'Achoo'sing the right treatment

CLINICAL QUESTION

Do oral antihistamines improve symptoms in adults with allergic rhinosinusitis?

BOTTOM LINE

Oral antihistamines reduce rhinosinusitis symptoms by ~10-30% versus placebo over 2-12 weeks. Individual antihistamines appear to have comparable efficacy. More patients attain moderate or better improvement with intranasal corticosteroids (~78%) versus antihistamines (~58%). There appears to be no meaningful differences between antihistamines and leukotriene receptor antagonists or in adding antihistamines to intranasal corticosteroids.

EVIDENCE

- Results statistically significant unless otherwise noted.
- Antihistamines versus placebo:
 - Systematic review [7 randomized controlled trials (RCTs), 639 patients] of antihistamines versus placebo over 2-12 weeks.¹
 - Patient-rated nasal obstruction score (scale 0-3, higher worse), baseline=1.65: Placebo improved symptoms 16% and antihistamines 48%.

- Systematic review (5 RCTs, 3329 patients) of bilastine (newer antihistamine) versus placebo over 1-12 weeks.²
 - Total symptom score effect size=0.28, similar to improving symptoms 10-16% over placebo.³
- Other systematic reviews found similar.⁴⁻⁶
- Antihistamines versus antihistamines:
 - Systematic reviews showed no statistical or clinical differences in Total or Nasal Symptom Scores between antihistamines.^{2,7}
- Antihistamines and other agents:
 - Two systematic reviews (5-16 RCTs, 990-2267 patients) compare intranasal corticosteroids to antihistamines over 2-8 weeks.^{8,9} Total nasal symptom scores improved more with intranasal corticosteroids (51%) versus antihistamines (31%).
 - Proportion attaining moderate control or better¹⁰ was higher with intranasal steroids (78%) versus antihistamines (58%), number needed to treat=5.
 - Systematic review (13 RCTs, 5066 patients) of antihistamines plus intranasal corticosteroids versus intranasal corticosteroids alone over 2-6 weeks.¹¹
 - Antihistamine did not add clinically meaningful benefit.
 - Other systematic reviews found similar.¹²⁻¹³
 - Two systematic reviews (9-14 mixed-design studies, 4458-5781 patients) of antihistamines versus leukotriene receptor antagonist over 1-12 weeks: No clinically meaningful differences.^{14,15}
- Limitations: Too many to list but include per protocol analysis, incorrect meta-analysis techniques, negative studies not published, and scales defined inconsistently.^{1,7,11,12,15}

CONTEXT

- Most antihistamines and many intranasal corticosteroids are available over-the-counter.
- Adverse event data is infrequently reported, inconsistent, and pooled statistics are generally not clinically interpretable.¹⁶ Versus Placebo:
 - Diphenhydramine mild/moderately more sedating (effect size=0.36).
 - Second-generation antihistamines slightly more sedating (effect size=0.14).¹⁶
 - Some antihistamines may have less sedation: Fexofenadine versus other second-generation (statistic uninterpretable)¹⁷ or bilastine (3%) versus cetirizine (7%).²

REFERENCES

1. Hore I, Georgalas C, Scadding G. Clin Exp Allergy. 2005 Feb; 35(2):207-12. doi: 10.1111/j.1365-2222.2005.02159.x. Erratum in: Clin Exp Allergy. 2005 Apr; 35(4):547.
2. Singh Randhawa A, Mohd Noor N, Md Daud MK, *et al.* Front Pharmacol. 2022 Jan 10; 12:731201.
3. Bachert C, Kuna P, Sanquer F, *et al.* Allergy. 2009 Jan; 64(1):158-65.
4. Canonica GW, Tarantini F, Compalati E, *et al.* Allergy. 2007 Apr; 62(4):359-66.
5. Compalati E, Baena-Cagnani R, Penagos M, *et al.* Arch Allergy Immunol. 2011; 156(1):1-15.
6. Mösges R, König V, Köberlein J. Allergol Int. 2011 Dec; 60(4):541-6.
7. Xiao J, Wu WX, Ye YY, *et al.* Am J Ther. 2016 Nov/Dec; 23(6):e1568-e1578.
8. Juel-Berg N, Darling P, Bolvig J, *et al.* Am J Rhinol Allergy. 2017 Jan 9; 31(1):19-28.

AUTHORS

Betsy Thomas, BSc. Pharm,
Anthony Train, MBChB MSc
 CCFP, **G Michael Allan**, MD
 CCFP

*Authors do not have any
 conflicts of interest to declare.*

9. Weiner JM, Abramson MJ, Puy RM. *BMJ*. 1998 Dec 12; 317(7173):1624-9.
10. Schoenwetter W, Lim J. *Clin Ther*. 1995 May-Jun; 17(3):479-92
11. Du K, Qing H, Zheng M, *et al*. *Ann Allergy Asthma Immunol*. 2020 Nov; 125(5):589-596.e3
12. Feng S, Fan Y, Liang Z, *et al*. *Eur Arch Otorhinolaryngol*. 2016 Nov; 273(11):3477-3486.
13. Seresirikachorn K, Chitsuthipakorn W, Kanjanawasee D, *et al*. *Int Forum Allergy Rhinol*. 2018 Oct; 8(10):1083-1092.
14. Xu Y, Zhang J, Wang J. *PLoS One*. 2014 Nov 10; 9(11):e112815.
15. Feng Y, Meng YP, Dong YY, *et al*. *Allergy Asthma Clin Immunol*. 2021 Jun 29; 17(1):62.
16. Bender BG, Berning S, Dudden R, *et al*. *J Allergy Clin Immunol*. 2003 Apr; 111(4):770-6.
17. Huang CZ, Jiang ZH, Wang J, *et al*. *BMC Pharmacol Toxicol*. 2019 Nov 29; 20(1):72.

**TOOLS FOR PRACTICE
PROVIDED BY**



IN PARTNERSHIP WITH



A CHAPTER OF THE COLLEGE OF FAMILY PHYSICIANS OF CANADA
UNE SECTION DU COLLÈGE DES MÉDECINS DE FAMILLE DU CANADA

Tools for Practice are peer reviewed and summarize practice-changing medical evidence for primary care. Coordinated by **Dr. G. Michael Allan** and **Dr Adrienne Lindblad**, they are developed by the Patients, Experience, Evidence, Research (PEER) team, and supported by the College of Family Physicians of Canada, and the Alberta, Ontario, and Saskatchewan Colleges of Family Physicians. Feedback is welcome and can be sent to toolsforpractice@cfpc.ca. Archived articles can be found at www.toolsforpractice.ca

This communication reflects the opinion of the authors and does not necessarily mirror the perspective and policy of the College of Family Physicians of Canada.