Comparative effectiveness of non-sedating antihistamines for patients with chronic spontaneous urticaria: a systematic review and network meta-analysis

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Abstract

Background Chronic spontaneous urticaria (CSU) is a kind of urticaria that occurs independently without any exogenous stimulus. Non-sedating H1-antihistamine is recognized as the first-line treatment option for CSU. Objective To access the comparative efficacy of non-sedating antihistamines in the treatment of CSU and to provide a relative ranking of these treatments. Methods We enrolled randomized controlled trials (RCTs) that compared a single non-sedating antihistamine with placebo or anther single non-sedating antihistamine through searching databases: CENTRAL, MEDLINE, and EMBASE; as well as the trial registries: ISRCTN, ClinicalTrials. gov, ChiCTR, and ICTRP, etc. Two investigators evaluated the eligibility, extracted the data, and assess the risk of bias of included trials independently. A Bayesian network meta-analysis was performed. Results We identified 42 RCTs with 8164 participants. Twenty-six studies were included for the further network meta-analysis. The odds ratio (95% credible intervals) of total overall symptoms relief after 4-week treatment, the top three ordered from the most to least effective non-sedating antihistamines were: loratadine 15.0 (2.9, 14.0), mizolastine 14.0 (2.9, 75.0), cetirizine 13.0 (4.4, 44.0). Conclusions All enrolled non-sedating antihistamines were found to show superiority over placebo in clinical outcomes in patients with CSU. Loratadine, mizolastine, and cetirizine are the most efficacious drugs. More head-to-head trials in a large number of patients are needed to perform in the future.

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