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Influence of prolonged treatment with omalizumab on the development of solid epithelial cancer in patients with atopic asthma and chronic idiopathic urticaria: A systematic review and meta-analysis.

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Author information

Abstract

OBJECTIVE: We investigated whether prolonged treatment with omalizumab influences development or progression of solid epithelial cancer in patients with atopic asthma or chronic idiopathic urticaria.

DESIGN: Systematic review and meta-analysis of interventional and observational studies. Randomized controlled trials were assessed for risk of bias using the Cochrane Risk of Bias tool, comparative observational studies were assessed using the Newcastle-Ottawa Scale, and non-comparative observational studies were assessed using the Joanna Briggs Institute Checklist for Prevalence Studies.

DATA SOURCES: We searched MEDLINE, Embase, Cochrane Library, and 'grey literature' for eligible studies to November 2017. All searches were updated in January 2019.

ELIGIBILITY CRITERIA FOR INCLUDED STUDIES: Randomized, quasi-randomized, controlled clinical trials and observational studies were included if they involved patients ≥ 12 years with moderate-to-severe persistent asthma or chronic idiopathic urticaria treated with omalizumab for ≥ 40 weeks. Eligible comparators included standard of care, placebo, cromoglycate, or no treatment.

RESULTS: 167 unique studies were eligible for inclusion; however, only twelve (7.2%, n=11 758) reported any outcome of interest, none of which involved patients with urticaria. 195 cancer events were reported. We found no statistically significant increase in the odds of study-emergent solid epithelial cancer in patients randomized to long-term treatment with omalizumab compared to standard of care (Peto OR: 0.65, 95% CI: 0.11, 3.74, I^2 = 41%). Less than one percent of participants of non-comparative observational studies (n=2 350) were diagnosed with a solid epithelial tumour (meta-proportion: 0.9% [95% CI: 0.24, 1.86%, I^2 = 56%]). In the only comparative observational study reporting on cancer, the proportion of study-emergent solid epithelial tumor events was nearly identical in both study groups (omalizumab: 2.3%, standard of care: 2.2%).

CONCLUSIONS: There is insufficient evidence to determine whether long-term treatment with omalizumab influences development or progression of solid epithelial cancer in these patient populations. PROSPERO registration CRD42018082211. This article is protected by copyright. All rights reserved.

KEYWORDS: anti-IgE; asthma; atopy; cancer; systematic review; urticaria

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