

Authors and Disclosures

Journalist

Emma Hitt, PhD



Emma Hitt is a freelance editor and writer for Medscape.

Disclosure: Emma Hitt, PhD, has disclosed no relevant financial relationships.

Dr. Hitt does not intend to discuss off-label uses of drugs, mechanical devices, biologics, or diagnostics not approved by the FDA for use in the United States.

Dr. Hitt does not intend to discuss investigational drugs, mechanical devices, biologics, or diagnostics not approved by the FDA for use in the United States.

From Medscape Medical News Allergies Reduce Risk for Glioma



Emma Hitt, PhD

February 7, 2011 — Allergies appear to protect against glioma, whereas antihistamine use may not influence glioma risk, according to an analysis of more than 400 patients with glioma and 600 hospital-based control patients.

Bridget J. McCarthy, PhD, from the University of Illinois at Chicago, and colleagues reported their findings in the February issue of *Cancer Epidemiology, Biomarkers & Prevention*.

According to the researchers, a number of studies have indicated an inverse association between history of allergies and risk for glioma. Furthermore, antihistamines may influence glioma risk via their effects on allergic conditions, and the antihistamine diphenhydramine hydrochloride has been associated with neurocarcinogenicity in rats.

In the current study, a total of 419 patients with glioma (344 high-grade cases and 75 low-grade cases) and 612 hospital-based control patients, with no history of neurodegenerative disease, brain tumors, or any cancers, were surveyed via telephone or Web-based strategies.

Questions focused on types of allergies (ie, seasonal, medication, pet, food, and other), as well as number of allergies, years since diagnosis, and age at diagnosis. In contrast to other similar studies, participants were asked to report only on allergies that had been medically diagnosed. Information on antihistamine use was also gathered, including type, duration, and frequency of exposure.

Patients with glioma were significantly less likely to report an allergy compared with control patients (odds ratio [OR], 0.60; 95% confidence interval [CI], 0.46 - 0.79). Specifically, high- and low-grade cases reported having significantly fewer allergies than controls (OR, 0.66; 95% CI, 0.49 - 0.87; and OR, 0.44; 95% CI, 0.25 - 0.76, respectively).

The risk for glioma was also inversely associated with the total number of different allergy types and with the number of allergies for each allergy type, both in a dose-dependent manner (*P* values for trends < .05). In contrast, age at diagnosis of first allergy and duration of allergic condition were not significantly associated with glioma risk.

In addition, antihistamine use was inversely associated with glioma risk, irrespective of its duration and frequency of use. However, when patients were stratified by allergy history, oral diphenhydramine hydrochloride use was significantly associated with a reduced risk for glioma only in patients with no medically diagnosed allergy.

Study limitations include possible recall and selection biases. For example, cognitive impairment may influence ability for those with glioma to recall details, yet having a glioma could lead to more attention to possible causes compared with the recall of control patients. In addition, case participants tended to be younger. Another potential limitation is that the study may have been underpowered.

"Our results confirm the overall association with allergies and the trend of decreased glioma risk with increasing number of allergies," McCarthy and colleagues conclude. The authors suggest that hyperactive immune surveillance related to atopic disease may limit abnormal cell growth and result in reduced glioma risk in those patients with allergies. However, "as the biological mechanism is still unknown, we cannot rule out the possibility that the primary effect is due to environmental or other factors related to allergies that are unmeasured in this study," they add.

"A comprehensive study of all aspects of allergies and atopic disease, as well as antihistamine use, in those with and without brain tumors using standardized questions and biological markers will be essential to further delineate the biological mechanism that may be involved in brain tumor development," they add.

The study was supported by a National Institutes of Health Specialized Programs of Research Excellence grant and by the American Brain Tumor Association. The authors have disclosed no relevant financial relationships.

Cancer Epidemiol Biomarkers Prev. 2011;20:370-378.

Medscape Medical News © 2011 WebMD, LLC
Send comments and news tips to news@medscape.net.
