

For immediate release

Increasing cases of anaphylaxis among children

MONTREAL, QC (April 21 2016) – Anaphylaxis, known to be a sudden and potentially life-threatening allergic reaction, seems to be increasing among children, according to a new study led by a team at the Research Institute of the McGill University Health Centre (RI-MUHC). The findings, published this week in the *Journal of Allergy and Clinical Immunology* (JACI), reveal that the percentage of emergency department (ED) visits due to anaphylaxis doubled over a four-year period based on data collected from the Montreal Children’s Hospital of the MUHC (MCH-MUHC).

“With the rising rates of allergies among Canadian children, we were interested in determining if anaphylaxis rates are also increasing,” says the study’s senior author Dr. Moshe Ben-Shoshan who is a pediatric allergist and immunologist at the MCH-MUHC and an assistant professor of Pediatrics at McGill University. “Our findings suggest a worrisome increase in anaphylaxis rate that is consistent with the world-wide reported increase.”

It is estimated that almost 600,000 Canadians will experience anaphylaxis in their lifetime and that more than half of the individuals who had anaphylaxis were not equipped with life-saving epinephrine. Anaphylaxis can occur within seconds or minutes of exposure to an allergen which can include certain foods, medications, insect venom or latex, for example. The allergic response is marked by symptoms involving at least two organ systems including the skin (hives, swelling), the gastrointestinal tract (vomiting, cramps), respiratory system (stridor, cough, wheezing) and cardiovascular system (drop of blood pressure).

The researchers collected data from 965 anaphylaxis cases seen at the MCH-MUHC between April 2011 and April 2015, as part of the nationwide Cross-Canada Anaphylaxis REgistry (C-CARE)—a project of the Allergy, Genes and Environment Network (AllerGen). C-CARE is led by RI-MUHC researcher Dr. Ben-Shoshan and is the first prospective study on anaphylaxis to assess the rate, triggers and management of anaphylaxis in different provinces and settings across Canada. Anaphylaxis was defined in the study as the involvement of two organ systems and/or hypotension in response to a potential allergen.

The study shows that between 2011 and 2015, the annual percentage of ED visits to the MCH-MUHC due to anaphylaxis rose from 0.20% to 0.41%, with the largest annual increase between 2013-14 and 2014-15. The team also observed that the majority (80.2%) of anaphylaxis cases were triggered by food, principally peanut and tree nut, and that children who did not receive epinephrine prior to arrival at the ED were more likely to receive multiple (two or more) doses of epinephrine at the hospital.

The underuse of epinephrine auto-injectors was also highlighted in the research. “Only slightly more than half of those who had an auto-injector used it prior to arrival in the emergency department,” adds the study’s lead author Dr. Elana Hochstadter, who is currently doing a fellowship in Pediatric Emergency Medicine at SickKids, and who was a pediatric resident at the Children’s Hospital at London Health Sciences Centre at the time of the study. “This increased the risk of administration of multiple epinephrine doses in hospital, therefore, it is of critical importance for parents and healthcare providers to work together to ensure the appropriate and timely use of epinephrine auto-injectors in the case of anaphylactic reactions.”

About the study

"Increasing visits for anaphylaxis and the benefits of early epinephrine administration: A 4 year study at a pediatric emergency department in Montreal, Canada" by Elana Hochstadter MD, Ann Clarke MD MSc, Sarah De Schryver, MD, Sebastien LaVieille MD MSc, Reza Alizadehfar MD, Lawrence Joseph, PhD, Harley Eisman MD, Moshe Ben-Shoshan MD MSc. DOI: <http://dx.doi.org/10.1016/j.jaci.2016.02.016>. It appears in [Journal of Allergy and Clinical Immunology](#), Volume 137, Issue 6. (2016) published by Elsevier.

Copies of this paper are available to credentialed journalists upon request; please contact Elsevier's Newsroom at newsroom@elsevier.com or +31 20 485 2492.

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About the Journal of Allergy and Clinical Immunology

The Journal of Allergy and Clinical Immunology publishes high-impact, cutting-edge clinical and translational research papers for allergists, immunologists, dermatologists, gastroenterologists, and other physicians and researchers interested in allergic diseases and clinical immunology. Articles cover such topics as asthma, food allergy, allergic rhinitis, atopic dermatitis, primary immune deficiencies, occupational and environmental allergy, and other allergic and immunologic diseases, and include clinical trials and mechanistic studies that report on novel therapies, insights into underlying mechanisms, and other discoveries that will inform our understanding of these diseases and ultimately improve the diagnosis and management of patients.

About the RI-MUHC

[The Research Institute of the McGill University Health Centre \(RI-MUHC\)](#) is a world-renowned biomedical and healthcare research centre. The Institute, which is affiliated with the Faculty of Medicine of McGill University, is the research arm of the McGill University Health Centre (MUHC) – an academic health centre located in Montreal, Canada, that has a mandate to focus on complex care within its community. The RI-MUHC supports over 460 researchers and close to 1,300 research trainees devoted to a broad spectrum of fundamental, clinical and health outcomes research at the Glen and the Montreal General Hospital sites of the MUHC. Its research facilities offer a dynamic multidisciplinary environment that fosters collaboration and leverages discovery aimed at improving the health of individual patients across their lifespan. The RI-MUHC is supported in part by the Fonds de recherche du Québec – Santé (FRQS). rimuhc.ca

About AllerGen NCE Inc.

[AllerGen NCE Inc.](http://allergen-nce.ca), the Allergy, Genes and Environment Network (est. 2004), is a national research network dedicated to improving the quality of life of people suffering from allergic and related immune diseases. Funded by Innovation, Science and Economic Development Canada Industry Canada through the federal Networks of Centres of Excellence (NCE) Program, the Network is hosted at McMaster University in Hamilton. Visit <http://allergen-nce.ca> for more information.

- 30 -

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