Using NHS Data to monitor trends in the occurrence of severe, food induced allergic reactions

Research programme: Food allergy and intolerance research
Study duration: 2019-10-01
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Conducted by: Imperial College London

Background

Food-allergic reactions due to accidental exposure are common in people with FA, but fatal and near-fatal food anaphylaxis occurs so rarely that collecting data relating to these severe reactions is very difficult. Non-severe allergic reactions to food are much more common (with an incidence of up to 1000 times greater than fatal food-related anaphylaxis) but obtaining accurate data relating to the circumstances of these reactions is challenging under the current diagnosis coding system used in the NHS.

This project will address two key questions:

1. What are the trends in the occurrence of food hypersensitivity reactions (including those due to IgE-mediated food allergy), and its consequences in terms of healthcare encounters (both to hospital and primary care)?
2. What are the circumstances surrounding severe, life-threatening reactions to food?

Objective and Approach

This project is split into three work packages (WP).

WP1: To describe the incidence of healthcare encounters in the UK related to food hypersensitivity from 2008-2018, using NHS datasets

Approach:

- Access existing NHS datasets (Hospital Admissions, Accident & Emergency visits, Critical Care admissions, Primary care visits via CPRD) to assess healthcare encounters due to food hypersensitivity over the past 10 years. By linking these different datasets, patient pathways through the healthcare system will be evaluated.

WP2: Establishing a prospective UK anaphylaxis registry through the British Society for Allergy and Clinical Immunology (BSACI), fully integrated into the existing European Anaphylaxis Registry (NORA).

Approach:

- A UK arm of NORA will be established using the same online platform as the existing European Registry.
- Data will be entered by healthcare professionals and/or patients either at clinical review, or at the time of presentation to hospital.
- To increase response rates, different versions of the questionnaire will be developed: (1) a comprehensive form mapped to existing NORA data fields for completion by Healthcare Professionals in the non-acute setting; (2) a shorter form with key data fields to increase data reporting in more pressured, acute healthcare settings; and (3) a form for completion by patients or their parent/guardian.
- Participation in the registry will be co-ordinated by BSACI, the UK's leading organisation for the healthcare professionals caring for patients with allergy.

A strategy will be developed to ensure good participation and optimised data collection with response rates being monitored monthly in the early stages.

WP3: Identify individuals who have experienced near-fatal food anaphylaxis (in compliance with data protection legislation) and undertake detailed interviews to provide information regarding the circumstances and context of the anaphylaxis event.

This WP will consist of four phases:

1. Identification of participants requiring Level 3 Critical Care for anaphylaxis

- Via NHS Digital datasets under full ethical approval, since 2008

2. Initial case verification

- Participants will be contacted and invited to provide minimal information regarding the circumstances of the anaphylaxis event resulting in their admission for intensive care, via a secure online survey or paper hardcopy

3. Case validation

- Participants will be asked to consent to provide the research team with further information (via a structured telephone assessment) regarding the index anaphylaxis event

4. Detailed case assessment and verification

- Where causality to a food is identified or suspected, participants will be invited to undergo interview and allergy testing to help verify the causative allergen(s)
- Ascertain co-existing and historic atopic and non-atopic diseases
- A detailed in-person structured interview will be conducted to confirm details about previous reactions and circumstances around the severe 'near-fatal' event