Respiratory manifestation of food allergy - Kenyan perspective

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FOOD ALLERGY AND SAFETY ASSESSMENT WORKSHOP

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Prevalence

• The global prevalence of allergic diseases is 20 - 30% pawanker et al world allergy org.j2008;1 (supplement):s4-S17
• 35 % of children with severe eczema have food allergy
• Food allergy is 8% in children and 2% in adults
• Infected with intestinal helminthes are protected from mast cell degranulation and less
• **WHO** estimates (2007), currently 300 million people have asthma; 210 million people have COPD while millions have allergic rhinitis and other often-under diagnosed CRDs
Types of food allergies

- IgE-mediated (reaction type-I),
- Non-IgE-mediated (cellular FA, reaction type III or IV),
- Combined (mixed IgE- and non-IgE-mediated)
  - Non-IgE mediated food allergy is supposed to be a cell-mediated immunologic reaction, which involves immune complex formation and complement deposition.
  - Non-IgE-mediated food sensitivities are becoming increasingly recognized.
Food implicated in allergies

- Gluten containing cereals, crustacean, eggs, fish, peanuts, soy-beans, milk, nuts like almonds or hazelnuts, celery, mustard and sesame seeds.
- Sulfur dioxide and sulfites in a concentration more than 10 milligram per kilogram.
- Lupine, as well as snails, oysters and mussels were added to the list.
Rates

• Eggs highest 9.4%
• And tomatoe lowest with 5.2%
• Wheat and milk was about 7%

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CUA in Kenya  Bowry Tula WAO confrence 2012

- The pattern of food allergies were
- 7 for cow milk,
- 6 for beef, 5 for eggs,
- 4 for red beans 2 for goat meat
- 1 for, chicken, fish, soya and 1 banana.
- 22/258 (8.5%) attributed to food additives
Prevalence of food allergies

• 25% of people claim to have food allergies

• However, the prevalence of true food allergy is
• approximately
  ▫ 8% in children under 1 year,
  ▫ 2-3% in children between 1-3 years
  ▫ 1-2% in adults

Clinical presentation

- Allergic rhino-conjunctivitis
- Laryngeal oedema
- Bronchial hyperreactivity
- Systemic anaphylaxis
- Food-associated exercise-induced anaphylaxis

- Hypersensitivity pneumonitis
- Pulmonary hemosiderosis associated
- With food allergy (Heiner syndrome)
- Non-atopic asthma
- Chronic otitis media with effusion
Association with respiratory symptoms

- Respiratory tract symptoms observed with food hypersensitivity reactions include
  - asymptomatic airway hyperreactivity
  - Nasal congestion, rhinorrhea, sneezing, itching of the nose and throat, coughing, and wheezing.
  - Anaphalaxis
- Food allergen exposure is usually through ingestion, but the inhalation of food proteins in the form of dust or aerosolized particles may also trigger respiratory symptoms.
Rare presentation

- Food-associated exercise-induced anaphylaxis

- Gustatory rhinitis is caused by a neurogenic reflex in persons who experience profuse watery rhinorrhea while eating, particularly spicy foods
Food preservatives

- Food preservatives can also trigger an asthma attack.
  - such as sodium bisulfite, potassium bisulfite, sodium metabisulfite, potassium metabisulfite, and sodium sulfite, are commonly used in food processing or preparation.
Example of foods with preservatives

- Dried fruits or vegetables
- Potatoes (packaged and some prepared)
- Wine and beer
- Bottled lime or lemon juice
- Shrimp (fresh, frozen, or prepared)
- Pickled foods
ISAAC studies

• Prevalence rates from the International Study of Asthma and Allergies in Childhood Phase III varied between the 22 centers from 16 African countries, but found the following in 13–14-year-olds: wheezing (4–22 %)
• Kenya asthma rate in Nairobi was 17%
Kenyan study 1994

- 72 consecutive patients with symptoms of allergy
- allergic rhinitis (48.6%);
- bronchial asthma and atopic dermatitis occurred in 29 patients (40.3%) each.
- Drug allergies were found in 22 patients (30.6%),
- Urticaria in 15 (20.8%),
- Food allergies in 13 (18.1%),
- Contact dermatitis in 10 (13.9%) and
- Allergic conjunctivitis in 6 patients (8.3%).

Trends in Kenya

- Esmai et al showed an almost doubling of allergic condition between 1995 to 2001
- Asthma from 6.6 to 12.6%
- Allergic rhinitis 14.9 to 38.6%
- Eczema 13.9 to 28.5%
Perspective

- Urbanization
  - Industrialization
  - Pollution from cars
  - Diet, flats poor circulation of air, mould, Vit D
- Irrigation and new crops
  - New allergens
  - Helminthes
- Improved diagnosis
- Legal
conclusion

- Very scanty published data
- Condition generally considered widespread but with improved diagnosis it could much less as seen from other data base
- Data is urgently required to inform policy and strengthen the law/regulatory authorities
• sulphites – such as sulphur dioxide and sodium metabisulphite. These additives are often used in processed foods as preservatives. Common sources include wine, fruit juices, canned fish and dried fruit.
• food colourings – such as the yellow food dye tartrazine. Food colourings very rarely trigger asthma attacks. Generally, if a person with asthma reacts to one food colouring, they should make sure to avoid eating any food colourings.
• monosodium glutamate (MSG) – this is a naturally occurring chemical frequently used as an additive to enhance flavour, particularly in savoury snack foods. Foods that contain high concentrations of MSG include stock cubes, gravy, soy sauce and packet soups. Hydrolysed vegetable protein is sometimes added to foods in place of MSG, and may trigger asthma in people who are sensitive to MSG.
• salicylates – naturally occurring salicylates are also present in many foods, including instant coffee, soy sauce, tomato paste and sauce, beer and honey. The drug aspirin (acetylsalicylic acid) is also a salicylate. Other non-steroidal anti-inflammatory drugs (NSAIDs) may also trigger dangerous attacks in people who are sensitive to aspirin. Around five to 10 per cent of people with asthma are sensitive to salicylates.