Abdominal pain
Food allergy versus food intolerance

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Disclosures
- I have no relevant financial relationships with the manufacturers of any commercial products and/or provider of commercial services discussed in this CME activity.
- I do not intend to discuss an unapproved/investigative use of a commercial products/device in my presentation.

Objectives
- Abdominal pain
- Food allergy
- Food intolerance

Autonomic Nervous System Has Three Divisions

Sympathetic division
Enteric division
Parasympathetic division

Thoracolumbar
Prevertebral ganglia
Myenteric plexus
Enteric plexus
Craniosacral nerve
Spinal nerves

Pediatrics

Pain-Predominant functional abdominal pain

Sensitizing medical events:
Inflammation
Distension
Trauma
Stress
Motility disorder

Genetic predisposition
Visceral hyperalgesia
Disability

Early life events

Sensitizing psychosocial events:
Depression
Anxiety
Family stress
Coping/Secondary style
gains
Biopsychosocial Model

- Pain episode
- Appraisal of pain episode
- Coping with pain episode
- Episode outcome
- Potential long-term outcomes

Risk factors:
- Genetics
- Gender
- Early life events

Appraisal of pain episode

Coping with pain episode

Chronic pain

Potential outcomes:
- Normal development
- Accommodation
- Maladaptive response


Severe Infantile Colic May Indicate Susceptibility to GI Disease, Allergy, and Psychological Disorders

GI disease
- Recurrent abdominal pain
- Allergic disease
- Asthmatic rhinitis-conjunctivitis
- Psychological disorder
- Supremacy
- Fussiness
- Aggressiveness
- Enuresis
- Sleep disorders

Without colic
Colic
All = P<0.05


Food allergy versus Intolerance

- Food allergy
  - Reproducible adverse reaction
  - Mediated by immunologic reaction
  - IGE
  - None IGE

- Food intolerance
  - Reproducible adverse reaction
  - Non immune mediated
  - Metabolic, pharmacologic, toxic, or undefined

Food allergy versus food intolerance may be difficult to distinguish.

Food allergy sometimes has other associated allergic comorbidity.
Food allergy
- More severe reactions
- Anaphylaxis
- Skin manifestation
- Vomiting
- Allergic comorbidity
  - Atopic dermatitis
  - Asthma
  - Allergic rhinitis, and eosinophilic gi diseases

Common Childhood food allergens
- Cow milk
- Soy
- Egg
- Peanut
- Wheat
- Tree nuts
- Shellfish/fish

Cow milk protein allergy
- Commonest childhood food allergy
- 2.5% prevalence
- 20% of all childhood allergy
- Community study showed
- 57% resolve by 4-5 years

Cow milk protein allergy
- Clinic based study
  - High risk population
  - 43% resolve by 10 years of age in clinic patients with higher allergy risk factors as opposed to general population study

Non IGE food allergy
- Food protein induced proctocolitis
- Breastfed 49%
- Cow milk formula 44%
- Soy formula 6.8%
- Colon biopsies >60 eosinophils/HPF

Non IGE food allergy
- Food induced enterocolitis syndrome (FPIES)
- Acute
- Chronic
- Diagnosis
  - Vomiting 1-4 hours following reintroduction
  - IV/IM Ondansetron
Non IGE food allergy

- Food protein induced enteropathy
  - Syndrome of recurrent abdominal pain, chronic malabsorptive diarrhea
  - Celiac disease
  - Cow or soy milk induced enteropathy during infancy or school age.

- Eosinophilic gastrointestinal disorders
  - Eosinophilic esophagitis
  - Eosinophilic gastritis
  - Eosinophilic gastroenteritis
  - Eosinophilic enteritis
  - Eosinophilic colitis

- Differential for EGID
  - Parasitic infection
  - Medication allergy
  - Eosinophilic granulomatosis with polyangiitis syndrome (Churg-Strauss
  - IBD
  - Hyper eosinophilic syndrome
  - Transplantation
  - Food allergy

Food intolerance

- Metabolic
  - Lactose intolerance
  - Congenital lactase deficiency
  - Sucrose intolerance
  - Congenital sucrose isomaltase deficiency
  - Maltase deficiency
  - Palatinase deficiency
  - Congenital amino acid/organic acid metabolic disorders

- Pharmacologic
  - Grapefruit and tacrolimus

- Toxic
  - Scrombroid fish poisoning
  - Honey and botulitoxin
**Diagnosis**
- Food challenge
- Food allergy testing
- Endoscopy and biopsies.
- Referral to the allergy specialist.

**Treatment**
- Food elimination and avoidance
- Acute treatment for anaphylaxis
  - Epinephrine
  - IV hydration

**Conclusion**
- It is difficult to differentiate abdominal pain caused by food allergy versus food intolerance
- Requires care clinical judgement

**Bibliography**
- ROME 3

**Bibliography**