Recurrent Abdominal Pain in Children

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Faculty/Presenter Disclosure

• Faculty:
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• Relationships with commercial interests:
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Disclosure of Commercial Support

• Commercial disclosures
  o None

• Potential for conflict(s) of interest:
  o Not applicable
Mitigating Potential Bias

- Not applicable
Objectives

• By the end of this session the audience should:
  o Be familiar with the common conditions related to recurrent and/or chronic abdominal pain in children
  o Be aware of ‘red flags’ that may help distinguish organic from functional disorders
  o Be familiar with the Rome III diagnostic criteria for Functional Gastrointestinal Disorders in children
  o Have a framework for the investigation of chronic abdominal pain in children
  o Have a framework to assist with deciding who to refer and when
Organic Disorders

• GI Disorders
  o Constipation
  o Celiac dx
  o Food intolerances/malabsorption syndromes
  o GERD/EE
  o Inflammatory Bowel Disease
  o PUD
  o Pancreatitis
  o Infectious – Giardia, Yersinia
  o Hepatobiliary diseases – choledocholithiasis, AIH, EBV
  o Anatomical/congenital issues

• Non-GI Disorders
  o Urogenital disorders – UTI/obstructive uropathy/PID/nephrolithiasis
  o Diabetes
  o Respiratory infections
  o Hematological disease
  o Henloch-Schönlein Purpura
Red Flags

- Fever
- Weight loss
- Vomiting
- Growth delay
- Delayed puberty
- Amenorrhea (1 or 2)
- Elevated inflammatory markers (ESR, CRP, platelets)
- Anemia
- Chronic diarrhea – esp nocturnal
- Hematemesis/malena/hematochezia
- Arthritis, skin dx, eye dx
- Abdo mass
- Perianal disease
- Dysphagia
- Emesis (not nausea)

BJGP 2012; 62:386-7
Constipation

- Usually a chronic problem
- Abdominal XR rarely helpful
- Management
  - “Cleanout”
  - Maintenance therapy
    - PEG 3350
    - Re-training/biofeedback
    - Biomechanics
  - Consistency & perseverance
- Further investigations
  - TSH, Ca, Celiac screening, imaging
Correct position for opening your bowels

**Step one**
Knees higher than hips

**Step two**
Lean forwards and put elbows on your knees

**Step three**
Bulge out your abdomen
Straighten your spine

**Correct position**
Knees higher than hips
Lean forwards and put elbows on your knees
Bulge out your abdomen
Straighten your spine
Celiac Disease

• The great mimicker
• Family history
• Screening
  o Anti-tissue transglutaminase antibody
  o Anti-endomysial antibody
  o Total IgA
• HLA markers DQ2/DQ8

• Endoscopy – unrestricted diet
Helicobacter pylori

- Indications for investigation & treatment very different in children compared with adults.

- Acquisition of infection occurs during childhood
  - BUT → usually asymptomatic
  - AND → complications rarely seen

- When to investigate
  - Peptic ulcer disease; refractory anemia
  - Family history of gastric Ca

- How to investigate → ENDOSCOPY + BIOPSIES/RUT
H. Pylori Investigations

- HP Antibody Testing
  - Never indicated in children

- Fecal antigen test
  - Issues with validation in children; good for monitoring eradication

- Urea Breath Test
  - Good for monitoring eradication

JPGN 2011; 53(2):230-243
Can J Gastro 2005; 19(7):399-408
Chronic Abdominal Pain

- Prevalence not known
- 2-4% of primary care visits
- 13-17% of 13-18 yr olds experience AP weekly
  - 8% had seen a physician for AP in the previous year
- ~50% of specialist pediatric GI visits

- Limited pediatric data but adult data shows:
  - Reduced QoL
  - Significant economic costs
  - School & academic performance
  - Peer interactions

JPGN 2005; 40(3): 249-261
JPGN 2008; 47(5): 679-680
Terminology

Recurrent Abdominal pain (RAP)
Chronic Abdominal Pain (CAP)
Recurrent Chronic Abdominal Pain (CRAP)

versus

Pain-predominant functional gastrointestinal disorders (PP-FGIDs)
Abdominal Pain

• Apley & Naish – 1950’s → RAP
  o Abdominal pain without an organic etiology
  o ≥ 3 bouts of AP over at least 3 months affecting activities
  o Became a general term for all non-organic AP

• CAP → Chronic Abdominal Pain
  o “Long lasting intermittent or chronic abdominal pain that is functional or non-organic” with a minimum duration of 3 months (AAP)

• FAP → Functional Abdominal Pain
  o Non-organic AP; psychogenic AP
FGID

• Functional Gastrointestinal Disorders

• Term used to encompass many disorders, many of which have abdominal pain as a focal symptom

• Issues exist regarding established diagnostic criteria and paucity of good treatment options

• Arguments regarding the “diagnosis of exclusion” approach in children
Functional GI Disorders

• VERY challenging to manage

• The Rome Group
  o www.romecriteria.org

• ROME III Criteria & differentials
  o IBS
  o Functional dyspepsia
  o Abdominal Migraine
  o Chronic functional abdominal pain
FGID Pathogenesis

- Poorly understood
- Multifactorial

Enteric NS

Central NS

Visceral Hyper-sensitivity

Psychological responses
Visceral Hypersensitivity

- 4 putative mechanisms:
  1. Sensitization of central (spinal) neurons
  2. Sensitization of primary sensory neurons
  3. Impaired stress response (HPAA)
  4. Altered descending inhibitory control

- ? Role of 5-HT
  - GI motility, sensation, secretion

- Early life events
  - Pyloric stenosis; CMPI; HSP; ?gastroenteritis

The Gut-Brain Axis

- The Public Speaking Effect:
Amplification

VS
Mechanisms in FGID

• Motility
  o Delayed gastric emptying
  o Strength & rate of peristaltic contractions

• Visceral hyperalgesia
  o Distension = pain
  o Contractions = pain

• Psychological & Sociological Factors
  o Cause or effect
  o Depression, anxiety, Type 1 personality
  o Caregiver anxiety !!!

• Other
  o Intestinal microbiota, enteric serotonergic pathways
Diagnosis of FGID

- Challenging

- Clinical diagnosis versus diagnosis of exclusion

- Comprehensive history & physical examination most important aspect

- Extensive workup usually not required
  - Low yield
  - Does not reassure parents
What’s happening for the child

- School
- Friends
- Sibling
- Bullying
- Worries/anxieties/depression
- Abuse
- Family discord – divorce, bereavement, financial issues, major change (relocation, new baby) etc
- Coping mechanisms (child & family)
Ix

• THOSE WITH RED FLAG SYMPTOMS

• Baseline
  o CBC & diff, CRP, ESR, Albumin, ALT, AST, Lipase, Amylase
  o Celiac screen – TTG Ig, Total IgA, EMA
  o Stool cultures, FOB
  o UA

• 2nd line
  o USS
  o Urine culture
Treatment

• Often complex & challenging
• Refractory cases require multi-disciplinary team
  o Ped GI, Psychiatry/psychology, dietician (SW)

• Education, education, education!!!

• Trigger identification & minimization
Treatment 2

- Pharmaceutical
  - Anti-spasmodics:
    - anti-histamines (cyproheptadine),
    - anti-cholinergics (dicyclomine, hyoscyamine)
    - TCAs
    - SSRIs
  - Acid-Suppression
  - Anti-flatulence therapies:
    - Simethicone
  - Anti-diarrheals:
    - Loperamide, cholestyramine in
  - Peppermint Oil
  - Probiotics
    - Lactobacillus GG, Lactobacillus reuteri, Bifidobacterium spp
Treatment 3

- Dietary modification
  - Water intake
  - Specific carbohydrate restriction
    - Lactose, fructose, sorbitol
  - FODMAP restriction
    - Fermentable oligo-, di-, monosaccharides and polyols
  - Amine & salicylate restriction
  - Fibre
    - Psyllium, inulin

- Behavioural
  - Cognitive behavioral therapy
  - Stress management, relaxation
  - EXERCISE
When to refer??

• Red flag symptoms/signs

• Failure to improve following initial treatment
  o 2 months of PPI
  o Refractory constipation
  o Significant behavioral/psychological comorbidities
  o Don’t meet Rome III criteria

• Significant morbidity with symptoms
Advice

• Discuss it with us....
I would rather have questions that can't be answered than answers that can't be questioned.