PEDIATRIC GI UPDATES

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WHITEHORSE NOVEMBER CME

NO CONFLICTS OF INTERESTS

- THANK YOU TO BC PEDIATRIC SOCIETY
- GASTROENTEROLOGISTS
- DR C. BARKER
- DR.M.KOVACS
- DR M.CARROLL

GI UPDATES

- **CONSTIPATION**
- **CELIAC DISEASE**
- **HELICOBACTER PYLORI**

CONSTIPATION

Objectives:

- Practical approaches :
- Red flags
- Management

RED FLAGS:

- History of weight loss or FTT
- Lumbosacral sinus or skin lesions
- Multiple cafei au lait spots
- Abnormal neurological examination (lower limbs)
- Anal abnormalities
- Abdominal distension/Vomiting
- Hypothyroidism
- Refractory to treatment

KEY POINTS:

- 99%Full term INFANTS PASS MECONIUM IN FIRST 24HRS. Failure to pass stool in first 48hrs is pathological until proven otherwise.
- Rectal examination is a common omission
- Fecal soiling(encopresis) is almost always associated with functional constipation, not Hirschsprung disease.
- Red flags suggest organic causes
- Treatment is mutimodal and includes medications

TREATMENT OF CHRONIC CONSTIPATION AND ENCOPRESIS

- Aggressively cleansed
- Osmotic laxatives
- Education

BOWEL CLEANSING:

- PEG 3350 1g/kg every hour until stool= water.
- Give with 8oz beverage(gatorade)
- Give with chips
- If you can clear the child—the encopresis will stop
- Do Not Give - Picosalax, Golytely - poor compliance

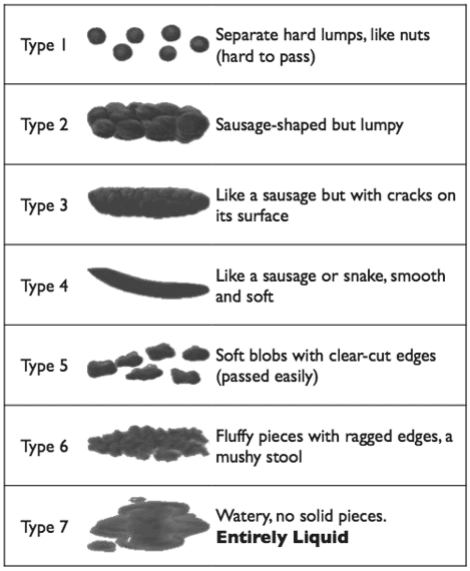
BOWEL CLEANSING:

- Enemas-1 nightly for 3 to 5 nights only with co-operative child.
- --- may reinforce anxiety
- --- not with anal fissure
- Adult enemas over 3years age
- AXR - no role, except in non-verbal child and evaluation of irritability

Osmotic laxatives:

- **PEG 3350** 0.8 TO 1G/KG/DAY
- - Max 17g/day
- - Adjust PEG to Bristol stool 6
- - Can add to cookies
- - Must drink fluids
- - May take 6 to 12months
- - Don't stop too early!

Bristol Stool Chart



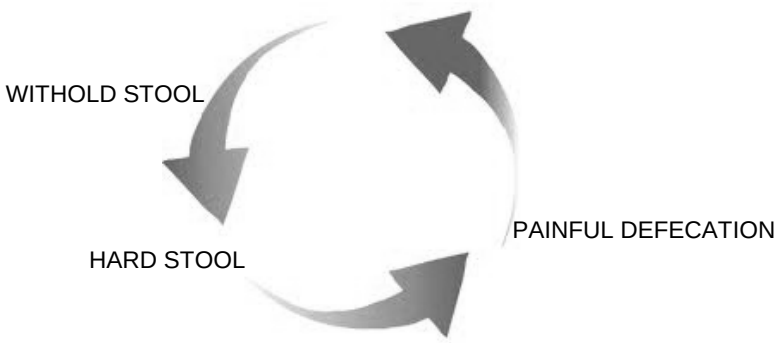
Prokinetics

- Cisapride-prolonged QT
- Eryrthromycin-low dose. Titrate.
- Other laxatives—not helpful

EDUCATION:

- PATHOPHYSIOLOGY
- REASSURANCE
- LENGTH OF Rx
- DIET

PATHOPHYSIOLOGY



PEARLS:

- cellphone
- modelling
- distraction/imagery
- patience - realistic goals 6 to 12 months
- calender reward 3 to 5 year old

Celiac Disease

- Definition: (OLD)

  A permanent, immune mediated, gluten dependent ***enteropathy*** with extra-intestinal manifestations which affects genetically susceptible individuals

  - (Hill ID. JPGN 2002)

- Pigeon hole diagnosis

Newer definition

Prototype Autoimmune Disease

- Trigger = gluten
- Auto-antigen = tTG2
- Elimination of the trigger leads to complete resolution of the disease

- Celiac disease is now understood to be a <u>multi-system disease</u>, NOT isolated to enteropathy.

DIAGNOSIS

- Clinical presentation &/or screening tests
- Biopsy in keeping with diagnosis*
- Other etiologies less likely or ruled out

Changing presentation of CD in Children

Current Presentation in Children

- Aspects of the classic presentation
- Chronic abdominal pain (RAP)
- Obese and abdominal pain
- Constipation
- No symptoms at all*
- Positive family history and positive screening
- Abnormal screening test in a higher risk group
- *Microcytic anemia**

Symptoms and Signs

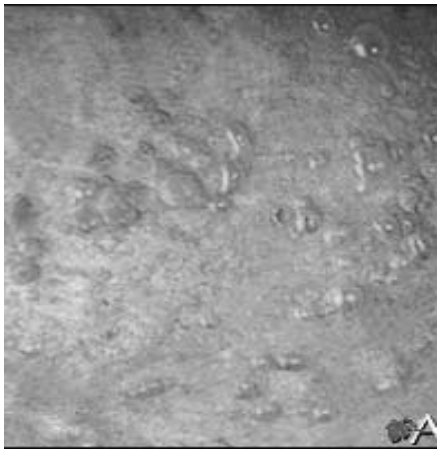
More Common

- recurring abdominal pain
- chronic diarrhea
- constipation
- weight loss/ no wt. gain
- fatigue
- unexplained anemia
- delayed growth / puberty
- FTT in infants
- gas
- bloating

Less common

- bone or joint pain
- osteoporosis, osteopenia
- behavioral changes
- tingling numbness in the legs
- muscle cramps
- seizures
- missed menstrual periods (often because of excessive weight loss)
- infertility, recurrent miscarriage
- aphthous ulcers
- pale, foul-smelling, or fatty stool
- tooth discoloration or loss of enamel
- dermatitis herpetiformis

Dermatitis Herpetiformis



High risk groups

- Type 1 Diabetics (10%)
- Other autoimmune diseases (3-7%)
- Trisomy 21 (12%)
- Turner's Syndrome (5%)
- William's Syndrome (2-3%)
- Selective IgA deficiency (3-5%)
- Autoimmune disease in the family (5%)
- Family history of celiac disease (8-15%)
- Lymphocytic Colitis in adults (15%)

SCREENING FOR CELIAC DISEASE

TTG = anti-tissue transglutaminase Ab

- Normal gut enzyme released during injury
  - Highly sensitive and specific
  - IgA based antibody against tissue transglutaminase (Celiac Disease autoantigen)
    - "95-98% sensitive & 90+% specific"

- Concern about false negative in children <2yr*

TTG <100 repeat 3 to 6 months

TTG ------ IgA -------- on gluten diet
When testing

THERAPY

- Therapy for Celiac Disease= Gluten Free Diet
- No Wheat,Barley,Rye
- Oats may be contaminated

QUESTIONS?

HELICOBACTER PYLORI IN PEDIATRIC PATIENTS

OBJECTIVES

- To discuss the epidemiology of H. pylori in Canadian children.
- To review the various diagnostic modalities available for H.pylori and their role in testing children.
- To outline the recommendations for treatment of H. pylori disease based on recent guidelines.

H.PYLORI

- Ubiquitous gram negative organism
- Spiral bacterium; 'S'-shaped
- Opportunistic organism
- High morbidity; low mortality

EPIDEMIOLOGY

◆ Est >50% of world's population infected

◆ Infection occurs mostly during childhood & thought to persist for life

◆ Males = Females

-Geography

-Age

-Ethnicity

-SES

◆ Highest rate of infection in 2-3 yr olds

GEOGRAPHY

- Prevalence in developing countries > than developed countries
- Rate of acquisition in childhood in general:

  --- Europe & Nth America ≈ prev <10%

  --- Children <10yrs ≈ 0-5% compared to 13-60% in developing countries
- Yearly rate of acquisition ~ 1%
- Transient infection in childhood may be common

CANADA

- BC, Ontario, Nova Scotia - 7.1 % prevalence
- First Nations

----Nth Eastern Manitoba - 56% up to 12 yrs age

---Nanavut Artic Community - 32% up to 15 yrs age

WHY TREAT

- Associated diseases:

--- Peptic ulcer disease

--- Atrophic gastritis

--- Gastric adenocarcinoma

--- B cell Mucosa Associated Lymphoid Tissue (MALT)

--- lymphomas

- ***All less frequently encountered in children***

WHY TREAT?

- All abdominal pain IS NOT *H pylori* associated gastritis or ulcer disease
- Abdominal pain is VERY COMMON in children
- Wide differential diagnosis for AP in children
- Symptoms are often non-specific
- Children often unable to give an accurate description of symptoms or their location

WHO TO TEST?

- *Children with first degree relatives with gastric cancer*
- Risk for gastric cancer 203 times higher in those who are *H pylori* infected
- Large adult trials suggest that treatment in precancerous infected individuals may be beneficial

WHO TO TEST?

- ***Refractory iron-deficiency anemia***
- Infection associated with treatment resistant iron deficiency anemia especially in adolescents
- Exclude other causes for iron deficiency

WHICH TEST?

Invasive vs non-invasive testing

- **Invasive Testing: Requires gastric tissue**
- Culture
- Gastric histopathology
- Rapid Urease Test (RUT)
- FISH
- PCR

WHICH TESTS?

- **Non-Invasive Tests:**
- C13 (or 14) Urea Breath Test (C13UBT)
- Stool Antigen Test (Enzyme Immunoassay: EIA)
- Antibody detection (IgG, IgM)

---Sens & Spec detection (IgG or IgA) varies widely in children

---Specific IgG may remain positive for several months-yrs after infection resolves

ESPGHAN/NASPGHAN Recommendations

Diagnosis:

- Biopsy PLUS RUT
- Culture

Eradication:

- Stool Antigen Test
- C13UBT

WHEN TO TREAT

◆ ***Positive H pylori with peptic ulcer disease***

--- High ulcer relapse rate without treatment

--- Also applies to healed ulcers or past hx of PUD

◆ ***Positive H pylori in absence of ulcer***

--- Treatment may be considered in high risk populations given evidence for causal relationship between *H pylori* & gastric cancer

◆ First degree relative with history of gastric cancer

PUD in Children

RED FLAGS FOR PUD PAIN

◆NOCTURNAL PAIN

◆EPIGASTRIC PAIN

WHAT TREATMENT?

- *Triple therapy*:

a)PPI *plus* AMOXICILLIN *plus* IMIDAZOLE

b)PPI *plus* AMOXICILLIN *plus* CLARITHROMYCIN

c)BISMUTH SALTS *plus* AMOXICILLIN *plus* IMIDAZOLE

- *7 to 14 days therapy*

WHICH TREATMENT?

Sequential Therapy:

Dual Therapy: PPI *plus* AMOXICILLIN for 5 days

followed by

5 days of Triple Therapy

(PPI/CLARITHROMYCIN/METRONIDAZOLE or TINIDAZOLE)

QUESTIONS?