The Ins and Outs of Gastrointestinal Disorders for People with Developmental Disabilities: PART II
Up and Down the GI Tract

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GERD in the General Population

- 40% have monthly symptoms
- 18% have weekly symptoms
- 50% of the people with reflux have damage
- Of those who have Endoscopy 10% have benign strictures, 3-4% have Barrett’s Esophagus
- Greater incidence in males

Mayo Clinic GI Board Review, 2006

GERD in DD

Unlike the General Population
- Believed to occur in 50% of DD adults r/t to Comorbid complex of physical disabilities and longer longevity
- Lack of communicative language predisposes aggressive and disruptive behaviors as an alternative means of communication, creates a challenge

Symptoms of GERD

Typical
- Heartburn
- Acid regurgitation
- Odynophagia
- Dysphagia
- Hypersalivation
- Chest discomfort

Atypical
- Chest pain
- Cough
- Wheeze
- Hoarseness
- Sore throat
- Throat clearing
- Postnasal Drip
- Neck/throat pain
- Globus sensation
- Apnea
- Ear pain
Evaluation of GERD

- **Endoscopy:** Direct Visualization of the Esophagus and Stomach, may get biopsies, gives objective data.

- **Upper Gastrointestinal Series:** Will identify gross structural anomalies, thickening, hiatal hernia, presence of reflux.

- **Esophageal Manometry and pH Study:** Gives objective data as to the pressures in the upper and lower esophageal sphincters, identifies motility disorders and quantifies the amount of reflux a patient has in 24 hours.

Treatment of GERD

<table>
<thead>
<tr>
<th>Modality</th>
<th>Rate of Healing</th>
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</thead>
<tbody>
<tr>
<td><strong>Lifestyle Modification</strong></td>
<td>20-30%</td>
</tr>
<tr>
<td><strong>Acid Neutralization</strong></td>
<td>20-30%</td>
</tr>
<tr>
<td><strong>Acid Suppression with H2 Blocker</strong></td>
<td>50%</td>
</tr>
<tr>
<td><strong>Acid Suppression with PPI</strong></td>
<td>&gt; Than or = to 80%</td>
</tr>
<tr>
<td><strong>Prokinetics</strong></td>
<td>30-40%</td>
</tr>
</tbody>
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Surgery For Reflux: Nissen Fundoplication

- Patients must be well chosen: no motility issues, no psychological component.
- Surgeon should be experienced (80-90% success rate).
- The success rate is decreased when patient is refractory to acid blocking medications- Reason Unclear???
- Many patients resume medication intake after surgery- Reason Unclear???
- Does not work with patients who have delayed gastric emptying- In some cases a gastric emptying study is helpful, diabetics.
Complications of GERD

- Barrett’s Esophagus (BE)
  - Clinically relevant because of the strong association with Esophageal Adenocarcinoma
  - Endoscopic exam necessary, pathology criteria for Dx.
  - Columnar Epithelium replaces stratified squamous epithelium, thought to occur because of years of acid exposure
  - Patients more frequently have hiatal hernias

Population/Prevalence of BE

- Difficult to assess
- 15% to 25% of people who have endoscopy have metaplasia in the squamos mucos
- Can be present in asymptomatic individuals-40% of the patients with Adenocarcinoma are asymptomatic

Risk Factors for Barrett’s Esophagus

- Age
- Male sex
- Caucasian > African American
- Reflux
  - Risk factor for cancer 0.5%, patient’s with Barrett’s have 40-125 fold higher risk than the general population

Significance of GERD

- 8 billion spent annually on meds
  - 2 billion for OVC meds
  - 6 billion for Rx. Meds
- Many patients are not optimally treated from adolescent to elderly
- Impacts quality of life
- Risk of serious complications-strictures, Barrett’s, cancer
Significance of GERD

- REMEMBER: The general population can express their discomfort. The lack of capacity in those with DD to directly communicate through language does not mean discomfort does not exist.

- NO studies exist regarding communicative means and other language to express the distress of GERD in the DD.

Assessing GERD in DD Adults

- Since people with DD are living longer the incidence of GERD increases with age

- Occurs most commonly in 5th decade of life

- In addition increase risk factors for infants and children with DD compounded with longevity, may cause further complications related to GERD as this population ages

Symptomatic Profile of GERD in DD

- Persistent vomiting

- Hematoemesis

- Rumination

- Regurgitation

- Food Refusal

- Dental Erosions

- Constipation

- Iron Deficiency Anemia

- Recurrent Pneumonia

- Behavior Problems

- Automutilation

- Aggression

- Fear

- Screaming

- depression

- restlessness


Predisposing Factors to GERD in DD

- Non-ambulatory

- Scoliosis

- Cerebral Palsy

- Anticonvulsants

- Benzodiazepines

- Down’s Syndrome

- IQ < 35

Boehmer and Klinkenberg
Treatment in DD

- Most effective are Proton Pump Inhibitors
  - DEXA scan should be considered
- Maintaining an upright position, Elevate HOB
- Maintaining a diet low in acidic foods, caffeine, chocolate, EtOH
- Eating several small meals per day
- No eating 2-3 hours before bed

Who do you screen?

- Any patient on long term PPI
- Long term GERD patients
- Any suspicion of severe GERD

What test do you order?

Endoscopy
- difficult to perform with IV sedation, most need General Anesthesia
- May require a relaxant prior to procedure ie. Midazolam
- Should use a pediatric endoscope
- Must be done with Alarm symptoms ie Hematemesis, anemia
- Consider Capsule Endoscopy
  Manometry with pH Study
  - Easy to perform
  - Frequently done with DD 85-90%
  - All Personnel must be informed to get successful results
  - Aimed towards comfort of the patient
CON- No Biopsies, No direct visualization
PRO- Gives objective data, quantifies reflux, no sedation needed

Behmer, AJG, 2000

Gastric Cancer (GC)

- 750,000 cases annually, Second most prevalent cancer
- Eight times the prevalence in Japan, China, Thailand, South America, Eastern Europe
- Increased risk with age
Etiology/Predisposing Causes of Gastric Cancer

- Environmental Factors - Nitrates, Secondary Amines, Preserved Meats/Vegetables, increase Carbohydrate and Sodium diet
- Genetic Factors - Family History
- Infection - H. Pylori Infection
  **Significant for DD individuals**
- Pernicious Anemia

Helicobacter Pylori Infection in Institutionalized DD

- This population has 2 times the rate as opposed to the general population
- Recurrences 7 times than that of the general population after treatment - passed by oral-oral or fecal-oral route
- Staff of institutions have increased prevalence
- Best Test - H. Pylori Stool Antigen highly accurate, easy to obtain

Clinical Features of Gastric Cancer

- Vague Symptoms
  - Epigastric Pain
  - Early Satiety
  - Abdominal Bloating
  - Dyspepsia
  - Weight Loss
  - Anorexia
- Nausea
- Vomiting
- Microcytic Anemia
- Hematemesis
- Palpable Mass
Prevalence of Celiac Disease in General Population

- In whole population Prevalence 1/133 (0.75%), common, 97% of people unaware, can develop anytime, can be asymptomatic
- Surface of the small intestine damaged by the consumption of the protein gluten found in grains
- An autoimmune disease
- Treated and controlled by the elimination of gluten from the diet
- Little information available for DD

Manifestations of Celiac Disease

- Malabsorption
- Diarrhea, gas, loose stools
- Failure to thrive
- delayed growth in children
- Weight loss
- Weakness
- Osteoporosis
- Iron Deficiency
- Anemia
- Constipation
- Bruising
- Night blindness
- Irritability
- Depression
- Anxiety
- Neurological and Neuropsychological complications - neuropathy, migraine, headache,学习 disabilities, developmental delays, ataxia, ADHD, Resistant Seizures

Relationship to DD

- Little literature available
- 5-15% prevalence with Down’s Syndrome
- People with CD at increased risk for developmental delay, learning difficulties and ADHD
- Increased prevalence of CD in pediatric autism (3.3%) compared to gen. Pediatric population, a gluten and dairy free diet has shown benefit for autistic people

Diagnosis of Celiac Disease

- Endoscopy Gold Standard - Villous Blunting
- May test for antibodies in the blood
  - Anti-Tissue Transglutaminase Antigen (tTGA)
  - IgA Anti-Endomysial Antibodies (AEA)
- Sensitivity for these is quite high although not 100%
Colon Cancer Screening

- Should follow the same guidelines as the general population according to the United States Preventative Services Task Force Guidelines (USPSTF)
- Nearly half of all adults don’t get the screening they should
- DD seem to have the same prevalence as the general population
- Bear in mind the patient’s qol, comorbidities, life expectancy (most people with DD have a good qol)

USPSTF Colon Cancer Guidelines, 2008

- Annual screening with high-sensitivity fecal occult blood testing
- Screening every five years with sigmoidoscopy, combined with a screening colonoscopy every 10 years
- Against routine screening for those age 76-85.
- No Screening for those over 86

Virtual Colonoscopy

- Requires preparation-Same as for conventional colonoscopy or 3 days clear liquids, laxative the night before
- No Sedation, unless patient can not stay still
- A good solution for Dystonia patients
- Quick(10 min), sensitive( lesions > 10 mm), minimally invasive
- CO2 in introduced into the colon
- Insurance coverage variable
- CON: If lesions visualized results in Colonoscopy, can not take biopsies

How is Virtual Colonoscopy Performed?

- Patients will lie face up on a table. A thin tube will be inserted through the anus and into the rectum. Carbon Dioxide gas will be pumped through the tube to expand the large intestine for better viewing.
- The table will move through the CT scanner unit to produce a series of cross-sectional images of the colon.
How is Virtual Colonoscopy Performed?

- At various points during the procedure, the doctor may ask patients to hold their breath to steady the images.
- The procedure will be repeated while patients lie face down.

Constipation in DD

- Feeding issues, decreased motility (hypotonia), autonomic dysfunction, hampered neuromuscular tone and physical inactivity attributed to chronic constipation.
- Can also be attributed to lack of fluids, side effects of medicines, other diseases, poor oral intake.

Constipation in DD

- Must encourage increased intake of fluids, increasing fiber, increasing physical activity where possible and even intestinal massage.
- Should screen for malignancy, thyroid disease and celiac disease other cause ie. Diverticular Stricture.

Treatment of Constipation

- Fiber supplements
- Polyethylene Glycol Miralax (Osmotic)
- Amitiza 24 micrograms bid (GI MOTILITY ENHANCER-Chloride Channel Enhancer)
- Lactulose (Osmotic)
- Pediasure with fiber
- Fleet enema
- Colchicine has been found to cause neurogenic stimulation and has worked in some DD patients for constipation, not generally used.
Chronic Constipation is not a benign condition.

The following conditions are some of the conditions associated with Chronic Constipation: fecal impaction, mega colon, intestinal obstruction, volvulus, anal fissures, diverticular disease, rectal prolapse and colon cancer.

Measures must be taken to promote regular emptying of the bowels. The regimen should be tailored to meet the individuals needs.

Our society must promote equality in provision of healthcare services.

Often the DD population is neglected because they can’t communicate effectively.

They are entitled to the same screening and quality of health care as the rest of the population.

Coordination of care is very important, open communication and continuity is important with family, caregivers, and health care workers so that minute changes can be observed, evaluated and treated.

Conclusion