Irritable Bowel Syndrome

Kimberly Persley, MD
Texas Digestive Disease Consultants
August 17, 2013
Irritable Bowel Syndrome

Bowels

Patients

Employers

Physicians

Family

NP/PA

Irritable
Irritable Bowel Syndrome

• Functional GI disorder

• Other terms
  – “spastic colon”, “irritable colon”, “nervous bowel”, “mucous colitis”

• 10-20 % of US population

• ~20-50% of gastroenterology referrals

• Women>>>men

• Symptoms typically begin before 35 years
Earliest descriptions of symptoms defining IBS

• 1849 – W Cumming

“The bowels are at one time constipated, at another lax, in the same person. How the disease has two such different symptoms I do not profess to explain. . . .”

• Other historical terms
  – mucous colitis
  – colonic spasm
  – neurogenic mucous colitis
  – irritable colon
  – unstable colon
  – nervous colon
  – spastic colon
  – nervous colitis
  – spastic colitis

• 1962 – Chaudhary & Truelove
  Irritable colon syndrome

• 1966 – CJ DeLor
  Irritable bowel syndrome

Epidemiology

IBS Referral Pattern

Specialists

Primary care

~70% Female

~30% Male

~25% Consulters

~75% Nonconsulters

IBS vs other important disease states

- US prevalence up to 20%\(^1\)
- US prevalence rates for other common diseases\(^2\):
  - diabetes \(3\%\)
  - asthma \(4\%\)
  - heart disease \(8\%\)
  - hypertension \(11\%\)

References:
Patho-etiology

• Altered GI motility
  – Abnormal small and large bowel motility

• Visceral hyperalgesia
  – Enhanced percent of normal motility
  – Visceral pain

• Psychopathology
  – Higher prevalence of physical and sexual abuse

• Microscopic Inflammation
Direct medical costs associated with IBS

- IBS results in an estimated $8 billion in direct medical costs annually\(^1\)
- IBS sufferers incur 74\% more direct healthcare costs than non-IBS sufferers\(^1\)
- IBS patients have more physician visits for both GI and non-GI complaints\(^2\)

IBS – Burden of disease

Productivity Burden

Absenteeism from work or school during the last 12 months

Days per year

<table>
<thead>
<tr>
<th>Days per year</th>
<th>IBS</th>
<th>Non-IBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

P=0.0001

Physiological distribution of 5-HT

- CNS – 5%
- GI tract – 95%
  - enterochromaffin cells
  - neuronal

IBS – Physiology

Pain produced by rectosigmoid balloon distension

% Reporting Pain

Rectosigmoid balloon volume (mL)

Signs & Symptoms

• Altered bowel habits
  – Constipation
  – Diarrhea
  – Postprandial urgency

• Abdominal pain
  – Diffuse or left lower quadrant
  – Meals may precipitate pain
  – Defecation improves pain

• Abdominal distention
Signs & Symptoms

• Clear or white mucus
• Nausea
• Dyspareunia and poor libido
• Worsening symptoms in the perimenstrual period
• Comorbid fibromyalgia
• Stress triggered
Rethink the diagnosis of IBS

• Onset in middle are or older
• Acute symptoms
• Progressive symptoms
• Nocturnal symptoms
• Weight loss
• Fever
• Rectal bleeding
Rome III criteria

• Recurrent abdominal pain at 3 days/month during the previous 3 months

• Associated with 2 or more of the following
  – Relieved by defecation
  – Onset associated with change in stool frequency
  – Onset associated with change in stool form
  – Mucorrhea
  – Abdominal bloating
IBS Patterns

• IBS-D
  – Diarrhea predominant

• IBS-C
  – Constipation predominant

• IBS-M
  – Mixed diarrhea and constipation

• IBS-A
  – Alternating diarrhea and constipation
Diagnostic tests

• Complete blood count (CBC)
• Comprehensive metabolic panel (CMP)
• Stool examination
  – Ova and parasites, enteric pathogens, fecal leukocytes, c.diff
Other Diagnostic Test

• Hydrogen breath testing
  – Small intestine bacterial overgrowth
  – Lactose and/or fructose intolerance

• Tissue transglutaminase or duodenal biopsies to exclude celiac disease

• Thyroid function tests

• Sedimentation rate and C-reactive Protein
SIBO Provides a Framework for Understanding IBS

- 92% of IBS patients have bloating
- 84% of IBS patients have SIBO confirmed via lactulose breath test
  - Methane excretion associated predominantly with constipation
- With normalized breath test, IBS patients achieved 75% symptom improvement with antibiotic therapy

Management

• Diet
• Lifestyle
• Psychological interventions
• Herbal Therapy and Probiotics
• Pharmacologic agents
Diet

• Keep it Simple
  – Food diary

• FODMAP
  – Low fermentable oligosaccharides, disaccharides, monosaccharides and polyols

• Gluten Free
  – Improvement in symptoms (IBS-D)
  – HLA-DQ 2/8 positive
Diet Recommendations

• Increase water intake (IBSc)
• Limit caffeine
• Limit Legumes
• Avoid artificial sweeteners
• Avoid Lactose and/or fructose
Low FODMAP Diet for IBS

• FODMAP –Fermentable Oligosaccharids, Disaccharides, monosaccharides and Polyols
  – Poorly absorbed and rapid fermentation short-chained carbohydrates
  – Fermentation = inc carbon dioxide, hydrogen and methane gas
  – Excessive fluid and gas accumulation
  – Sx: bloating, abdominal pain and distention
  – Found in a wide variety foods:

  Shepherd, Clin Gastro Hep 2008;6: 765
Gluten Free Diet and IBS

• Prevalence of celiac disease in IBS is similar to healthy controls

• Nonceliac IBS-D patients HLA-DQ2/8 positive have improvement of symptoms on GFD

• 4 week RCT in 45 patients with IBS-d, fewer bowel movements/day on GFD

• Gluten alters bowel barrier function in IBS-d

Vazquez-Roque, Gastro 2013;144:903
Exercise

- 102 patient randomized to physical activity vs control
  - Physical activity-3x/wk, 20-60 mins of mod-vigorous activity for 12 weeks
  - Control- maintain current lifestyle
- 75 % women
- Primary endpoint was a change in IBS Symptom severity score IBS-SSS
- $p=0.003$

Johannesson E, Am JG 2011;106:915
Psychological Interventions

• Referral to clinical psychologist
  – Cognitive-behavioral therapy
  – Psychotherapy
  – Hypnotherapy
Fiber Supplementation

• Absorbs excess water & stimulation of stimulation of bowel elimination
  – Constipation and mild diarrhea
• Psyllium (Metamucil)
  – Natural product
  – Plantago species of plant
• Polycarbophil compounds (Citracel, Fiberon)
  – Synthetic
  – Less fatulence
• Dose 1 to 3 times a day
Herbal therapy

- **Peppermint**
  - Improves abdominal cramps and intestinal gas
  - Usually taken as a capsule

- **74 patients with IBS-d (Bangladesh) RCT x 6 weeks**
  - Improvement of abdominal pain ($p > 0.001$)
  - QOL no difference
  - Diarrhea no difference

Ford AC, BMJ 2008;337
Probiotics

• Activia
  – Bifidobacterium Regularis
  – Several studies in normal healthy subjects
  – 41 women with IBS-c
  – 1 container twice daily x 4 weeks

  – Results
    • Decreased abdominal distention
    • Acceleration of orocecal and colonic transit

Agrawal A. APT 2009;29-104-114
Probiotics

• Do they work?
• Should you recommend?
• What is the best probiotic?
Probiotics

• Align
• VSL#3
Align

• Bifidobacterium infantis
  – 77 IBS patients randomized x 8 weeks
    • Lactobacillus salivarius
    • Bifidobacterium infantis
    • Placebo
  – Endpoints: abdominal pain/discomfort, bloating/distention, BM consistency/frequency
  – B.infantis group decrease in pain and bloating
    • No change in stool frequency and consistency

O’Mahony L.Gastro 2005;128:541-551
VSL#3

• 8 different strains:
  – B.breve, B.longum, B.infantis, L.acidophilus, L.plantarum, L.paracasei, L.bulgaricus, S.thermophilis

• 59 children with IBS
  – Randomized, double blind, placebo controlled crossover trial x 6 week
  – Primary endpoint
    • Relief of symptoms
  – Secondary endpoints
    • Improvement of bloating and gas
    • No change in stool consistency and frequency

Pharmacologic Therapy

• Anticholinergics/Antispasmodics
  – dicyclomine, hyoscyamine

• Antidiarrheals
  – Diphenoxylate, loperamide

• Antidepressants

• Serotonin receptor antagonist

• Chloride channel activators

• Guanylate cyclase C
Alosetron

• 5-HT3 antagonist
• Brand name: Lotronox
• Indication: severe IBS-D in females not responding to other therapies
• Dose: 0.5 to 1 mg po bid
  – Must be enrolled in prescriber program
• Side effects
  – Constipation (1/3 pts), ischemic colitis, rectal bleeding and nausea
• Pregnancy category B
Lubiprostone

• Activation of CIC-2 chloride channels
• Brand name: Amitiza
• Indication: IBSc and CIC
• Dose: 8 mcg po bid
  – Should be taken with food
• Side effects
  – diarrhea, nausea, headache, flatulence
• Pregnancy category C
Linaclotide

• Agonist guanylate cyclase 2 C
• Brand name: Linzess
• Indications: IBSc and CIC in adults
• Dose: 290 mcg once daily
  – 30 mins before meal
• Side effects
  – Diarrhea, bloating, abdominal pain
• Pregnancy category C
Antidepressants

• Moderate to severe IBS symptoms
• Low doses
• 4 to 6 weeks before improvement of symptoms
Tricyclic Antidepressants (TCA)

• Amitriptyline (elavil)
  – Starting dose 10-20 mg
• Imipramine
• Desipramine
• Nortriptyline
• Duration: at least 6 months
• Side effects
  – dry mouth, dizziness, nervousness, constipation
Selective Serotonin Reuptake Inhibitors (SSRI)

- Citalopram (Celexa)
- Escitalopram (lexapro)
- Paroxetine (Paxil)
- Sertraline (Zoloft)
- Fluoxetine (Prozac)

- Side effects
  - Nervousness, diarrhea, vivid dreams
Serotonin-Norepinephrine Reuptake Inhibitor (SNRI)

- Similar pain relief as with TCA but fewer side effects

- Venlafaxine (Effexor)
  - 25 to 37.5 mg q day starting dose

- Duloxetine

- Side effects
  - Nausea, constipation, dizziness, dry mouth or blurred vision
IBS Algorithm

**Symptom Features**

- **Constipation**
  - <50 yr
  - >50 yr

- **Diarrhea**
  - <50 yr
  - >50 yr

- **Pain/Gas/Bloat**
  - <50 yr
  - >50 yr

**Review Diet History**

- Yes

**Additional Tests**

- cscope
- Breath test
- Cscope
- EGD
- Cscope
- EGD

**Therapeutic Trial**

- Fiber supplementation, Miralax or MOM
- Amitiza or Linzess
- Imodium, Lomotil
- Alosetron
- Antispasmodic
- Antidepressants
- Probiotics
Thank you