Diagnosing and Managing IBS in IBD Patients

September 2012

Professor David S Sanders
Consultant Gastroenterologist
Royal Hallamshire Hospital & University of Sheffield
Patient Comes to see you with GI symptoms

43 year old lady

Davina Sanders

Lives in posh land (Jesmond)

Runs 10 miles per week

Healthy diet

4th consultation ‘not happy’

Also has non-GI symptoms – ‘aches and pains’ and ‘fatigue’

Recurrent abdominal pain or discomfort at least 3 days per month in the last 3 months associated with 2 or more of:

1. Improvement with defecation
2. Onset associated with a change in frequency of stool
3. Onset associated with a change in form (appearance) of stool

Longstreth, GF, et al. Gastroenterology 2006; 130:1480
Amitriptyline Deficient?!
Concomitant IBS was associated with reduced SF-36 scores in patients (P=<0.0001)

Barratt SM et al *Eur J Gastroenterol Hepatol* 2011;23:159-65
Alterations in gut flora

Altered brain-gut interaction

Visceral hypersensitivity

Neurotransmitter dysfunction

Psychological stress

GI dysmotility

IBS
The validity of symptom based diagnostic criteria?

- Crohn’s with semi-circumferential ulceration
- Crohn’s with stricture
- Superficial ulcers

- IBS/PUD/IBD (n=149)
  Thompson WG *Gut* 1984;25:1089-92

- 33% of patients with ulcerative colitis in remission fulfilled criteria (n=98)
  Isgar B et al *Gut* 1983;24:190-2
Odds of IBS-type Symptoms in IBD Patients versus Controls

4 studies, 185 (25.9%) of 713 IBD patients with IBS-type symptoms versus 46 (7.5%) of 612 controls.
Summary of Findings

• Prevalence of IBS-type symptoms in IBD ~ 40%
  – Odds ~ five-fold that of controls without IBD

• Prevalence in IBD in remission 35%
  – Odds ~ four-fold that of controls without IBD

• Odds of IBS-type symptoms higher in active IBD

• Prevalence of IBS-type symptoms in CD ~ 45%

• Prevalence of IBS-type symptoms in UC ~ 35%

• Odds of IBS-type symptoms in CD > 1.5-fold that in UC

• Remission determined as Crohn’s disease (CDAI) <150 & UC disease activity index <3 & CRP<10

• Calprotectin significantly elevated in IBS+ patients with IBD (associated worse HAD and IBDQ scales)

• Abnormal Calprotectin levels suggest that the mechanism in most cases is likely to be occult inflammation rather than co-existent IBS

Faecal Calprotectin (FC) and IBS-type Symptoms in IBD


Okay the markers of inflammation are negative what next?
Abdominal pain and diarrhoea

Can other diseases masquerade as IBS?
Bile acid *malabsorption*

Reduces calcium-mediated water & electrolyte absorption:
*Net fluid loss*

Liver

Gall bladder

<< 97%

TI absorption reduced

>> 3%

Excess BA spills into colon

Watery diarrhoea
The *SeHCAT* retention test

- Uncollimated gamma camera
- 5 minute AP, PA views and background

\[ 23-\text{[}^{75}\text{Se}] \text{ Selena-25-HomoCholic Acid Taurocholate (SeHCAT) Retention Test} \]

\[ \text{SeHCAT} \]

BAM = retention at day 7 < 10%
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ileal Resection</td>
<td>37 (97)</td>
<td>91 (90)</td>
</tr>
<tr>
<td>Ileal Crohn’s; unoperated</td>
<td>44 (54)</td>
<td>75 (40)</td>
</tr>
<tr>
<td>Cholecystectomy ± gastric surgery</td>
<td>26 (58)</td>
<td>210 (43)</td>
</tr>
<tr>
<td>Diarrhoea: Irritable bowel syndrome (D-IBS)</td>
<td>197 (33)</td>
<td>652 (33)</td>
</tr>
</tbody>
</table>

BAM in D-IBS: constant over **TWO decades**

<table>
<thead>
<tr>
<th>Group</th>
<th>BAS therapy</th>
<th>Response n (%)</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Good</td>
<td>Partial</td>
<td>No</td>
<td>Not assessed</td>
<td></td>
</tr>
<tr>
<td>Structural Disease (n = 63)</td>
<td>49</td>
<td>25 (51)</td>
<td>11 (22)</td>
<td>6 (12)</td>
<td>7 (14)</td>
<td></td>
</tr>
<tr>
<td>D-IBS (n = 99)</td>
<td>80</td>
<td>35 (44)</td>
<td>19 (24)</td>
<td>9 (11)</td>
<td>17 (21)</td>
<td></td>
</tr>
</tbody>
</table>

Similar response rates to BAS in both groups (~70%)
The Pancreas & Inflammatory bowel disease (IBD)

- Association with Crohn’s disease
- Increased rate of gallstones
- Duodenal involvement
- Drug related pancreatic impairment

- Recent study revealing up to 30% patients with IBD abnormal MRCP or faecal elastase-1 (n=79)

Barthet M et al *Pancreatology* 2006;6:464-71
Faecal Pancreatic Elastase

- Cross-sectional study (Crohn’s, ulcerative colitis and controls n=100 each) CDAI or Truelove and Witts scores
- EPI in 14 Crohn’s and 22 Ulcerative colitis
- Increased risk of EPI if opening bowels>3/day (Odds Ratio [OR] 25), passage of loose stool (OR 7.7), previous surgery (OR 3.7)

Faecal Pancreatic Elastase & IBD

- At 6 months EPI normalised in 24 patients and 12 had continued low EPI – these patients opened their bowels a large number of times (OR=5.4), had previous surgery (OR=5.7) or had longer duration of disease (OR=4.2)

- EPI is reversible in most IBD patients and is not associated with active disease

- They did not intervene with pancreatic supplements!

Small Bowel Bacterial Overgrowth (SBBO)

- Small intestinal bacterial overgrowth mimicking acute flare as a pitfall in patients with Crohn's Disease
- 38/150 (25.3%) Glucose Hydrogen Breath Test

Klaus J et al *BMC Gastroenterol* 2009 Jul 30;9:61
Is there a relationship between inflammatory bowel disease (IBD) and coeliac disease?

N=305 with coeliac disease, 354 with IBD and 601 healthy controls
• Prevalence of IBD in coeliac disease was increased compared to controls (Odds ratio 9.98 p=0.0006).
• Prevalence of coeliac disease in IBD was comparable to controls (Odds ratio 1.02 p=1.0).
• Coeliac disease carries a significantly increased risk of developing IBD during follow up compared to healthy controls.
• IBD carries no increased risk of developing coeliac disease.

Lactose Malabsorption

• Racial variation

• 0.5 pint

• IBS ~ 25%

• Not necessarily any symptomatic benefit

• 40-70% of IBD

• More common in ileal Crohn’s

Barrett JS et al *Aliment Pharmacol Therap*

2009;30:165-74

Eadala P et al *Aliment Pharmacol Therap*

2011;34:735-746
Alterations in gut flora
Visceral hypersensitivity
Alteration brain-gut interaction
Neurotransmitter dysfunction
GI dysmotility
Psychological stress

IBS
Alterations in gut flora
Altered brain-gut interaction
GI dysmotility
Psychological stress
Neurotransmitter dysfunction
Visceral hypersensitivity
Lactose

IBS
Alterations in gut flora
Altered brain-gut interaction
GI dysmotility
Psychological stress
Neurotransmitter dysfunction
Visceral hypersensitivity

IBS

Lactose
SBBO
Alterations in gut flora
Altered visceral interaction
Lactose
SBBO
Pancreatic
Visceral hypersensitivity
Altered brain-gut interaction
GI dysmotility
Neurotransmitter dysfunction
Psychological stress
IBS
Alterations in gut flora

Altered visceral function

Lactose

Altered brain-gut interaction

Visceral hypersensitivity

GI dysmotility

SBBO

Neurotransmitter dysfunction

Pancreatic dysfunction

Psychological stress

Bile acid
Alterations in gut flora

Lactose

Altered brain-gut interaction

SBBO

GI dysmotility

Pancreatic

Psychological

Bile acid

Neurotransmitter dysfunction

Coeliac disease

Psychological stress
Summary

IBS in IBD patients things to consider:

• First consider taking it seriously – honestly you can improve the patients quality of life

• Exclude occult active disease – serological markers and stool markers

• Consider an array of the other tests we have discussed

• Then if left with true IBS your therapeutic options including amitriptyline are more likely to work!
On-going Research at the Royal Hallamshire Hospital & International GI and Endoscopy Fellowships

Contact: david.sanders@sth.nhs.uk

Imran Aziz  Nina Lewis  Mohammed Karajeh  John Leeds  Kate Evans

Steve Barratt  Andrew Hopper & Reena Sidhu  Marios Hadjivassiliou