Update on diverticular disease and investigating the colon in older people

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Prevalence of diverticular disease at death by age in Europe

Prevalence of diverticular disease at death by age and region

% with diverticular disease at post mortem

Age at death

20-54 55-64 65-74 >75

Tromso Belfast Crete Singapore

Distribution throughout colon

- Western countries - diverticula commoner in sigmoid and descending colon
- Asia - diverticula occur primarily in caecum and ascending colon
Prevalence of diverticular disease at death by sex and region

Proportion of women and men with diverticular disease treated surgically

694 cases treated at Massachusetts General Hospital 1964-83
Diverticular disease spectrum

- Asymptomatic
- Symptomatic uncomplicated
  - recurrences of pain, distension, change in bowel habit
- Complicated – inflammation
  - 75% simple acute diverticulitis
  - 25% abscess, free perforation, fistula formation
  - haemorrhage – 33% massive
- Does not cause occult GI bleeding
  - i.e. does not cause iron deficiency anaemia
Incidence of hospitalisation for acute diverticulitis in US 1998-2005

Incidence / 100,000 person years

Age (years)

Data from Etzioni DA 2009, Ann Surg 249, 210

Incidence of diverticular perforation in UK 1990-2005

Incidence / 100,000 person years

Data from Humes DJ et al 2009, Gastroenterology, 136, 1198
Incidence of perforation

Age (years)

Incidence / 100,000 person-years

Mortality / 1000 person-years

Co-morbidity score

Both sets of data from Humes DJ et al 2009, Gastroenterology, 136, 1198

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Dietary fibre

• Widely accepted that low dietary fibre implicated in development of diverticula in left colon

• Low fibre leads to low stool mass and narrow lumen with increased intraluminal pressure

• Critical point at which intraluminal pressure forces mucosa through circular muscle coat at sites of penetration of blood vessels
Problems with fibre hypothesis

- Disease of older age
- Life-expectancy in Africa remains low
- No great increase in age-adjusted mortality from diverticular disease in UK over past 30 years despite steady decrease in dietary fibre intake
- Inverse relationship between fibre, other nutrients and total energy intake

Benefits of fibre

- Five RCTS – total 150 subjects
- Three trials showed significant improvement in symptoms
- One lactulose was equally effective
- Fibre no better than fybogel
- 20-30 g/d required to show benefit

*Still mainstay of treatment for symptomatic uncomplicated diverticular disease*

Reviewed by Trivedi CD et al 2008 J Clin Gastroenterol, 10, 1145
Genetic predisposition

• Ethnic variations in site & age of onset
• Westernisation of diet
  – Japan – higher prevalence of right sided diverticula but left sided increasing
• Studies of migrant populations
  – Israel
Change in prevalence of diverticular disease on barium enema in subjects > 50 years old between 1969 - 84

Data from Levy N et al 1985, Dis Col Rect 28, 416
Non-absorbable antibiotics

- Three RCTs – 555 patients in total
- All three showed that rifaximin was superior to fibre alone in symptom relief

Reviewed by Trivedi CD et al 2008
J Clin Gastroenterol, 10, 1145
Influence on colonic microflora and/or chronic inflammation

- Mesalazine & non-absorbable antibiotics
- 2 RCTs – 210 patients in total
- Mesalazine as effective as rifaximin in symptom control
- 2 RCTs – > 200 patients
- Mesalazine + rifaximin more effective than rifaximin alone

Reviewed by Trivedi CD et al 2008
J Clin Gastroenterol, 10, 1145
Probiotics

- Small uncontrolled studies only so far
- May decrease symptoms

Reviewed by Sheth A & Floch M 2009
Nutr Clin Pract, 24, 41
Risk factors for complications

- Smokers
  - but not alcohol or caffeine
- NSAIDs & paracetamol
- Obesity
- Vigorous activity reduced incidence of diverticulitis and diverticular bleeding in 18 year follow up of >47,000 US males (Strate LL et al Am J Gastroenterol 2009; 104: 1221)
Benefits and risks of specific colon investigations for older people
Incidence of advanced neoplasia on colonoscopy in the very elderly


N=1199
Age 80-100

Perforation = 1
Haemorrhage = 3
Obstruction = 1
Splenic laceration = 1

Incidence of perforation per 1000 procedures (n = 39286)

![Bar chart showing incidence of perforation by age and procedure type.](S Bruce - BGS Aut 2009)

Colonoscopy complications in UK

- Age range 30-93
- N = 9223
- Overall perforation rate = 1:769
- Therapeutic procedures = 1:460
- 30-day readmission = 12/1000 procedures (34% elective)
- 30-day mortality = 1.1/1000 procedures

American 30 day morbidity study

- Telephone interview of 1196 patients a month after out-patient colonoscopy
- 16% reported complications at interview
- 1.3% complications known to endoscopist prior to interview
- Commonest complications reported:
  - abdominal discomfort (5.4%)
  - rectal bleeding (2.1%)

Zubarik et al. Gastrointestinal Endoscopy 1999; 50: 322-328
American 30 day morbidity study

- No deaths or perforations
- 7 patients hospitalised but only 2 known prior to interview
- 20 required emergency opinion - 9 known prior to interview
- Those over 65 years were significantly more likely to need emergency care or hospitalisation

Zubarik et al. Gastrointestinal Endoscopy 1999; 50: 322-328
Hastings study
Immediate complications

% of total colonoscopies

N = 100, Age 75-95 (average 82.1) years
Symptoms detected at telephone interview

- Dizzy or faint: 14%
- Difficulty getting to the toilet on time: 10%
American 5-year survival study

- 404 subjects
- Veteran Affairs facility & urban county hospital
- 41% died (mean survival 4.1 years)
- Co-morbidity and age were stronger predictors of mortality than either indication for or result of colonoscopy.

Risks of bowel prep

- Vomiting induced mucosal tears
- Dehydration & electrolyte disturbance
- Acute calcium / electrolyte disturbance due to high phosphate load
- Nephrocalcinosis which may lead to permanent renal damage

http://www.nrls.npsa.nhs.uk/resources/type/alerts/
Increased risk of bowel prep

- Age
- Pre-existing cardiovascular disease
- Pre-existing renal disease
- Hypertension
- Drugs – diuretics, ACEIs, ARBs, NSAIDs

http://www.nrls.npsa.nhs.uk/resources/type/alerts/
Clinical assessment of all patients requiring bowel prep for colon / BaE / CT colo

- To ensure that bowel prep is not contraindicated
- To decide on the most appropriate bowel prep for each patient
- For the bowel prep to be authorised by a clinician
- To provide written instructions to the patient
- To provide a contact number in the event of problems.

BSG response to NPSA alert
Who performs assessment?

- A GP making a direct referral?
- A hospital doctor requesting an examination?
- A nurse in a pre-assessment clinic?
- A member of clinical staff in the endoscopy unit?
What should be done?

- Take account of co-morbidities and renal function
- From GP records?
- From Hospital records?
- From the patient directly (plus blood result)?