Update on diverticular disease and investigating the colon in older people

Stuart Bruce

St Leonards-on -Sea

Prevalence of diverticular disease at death by age in Europe

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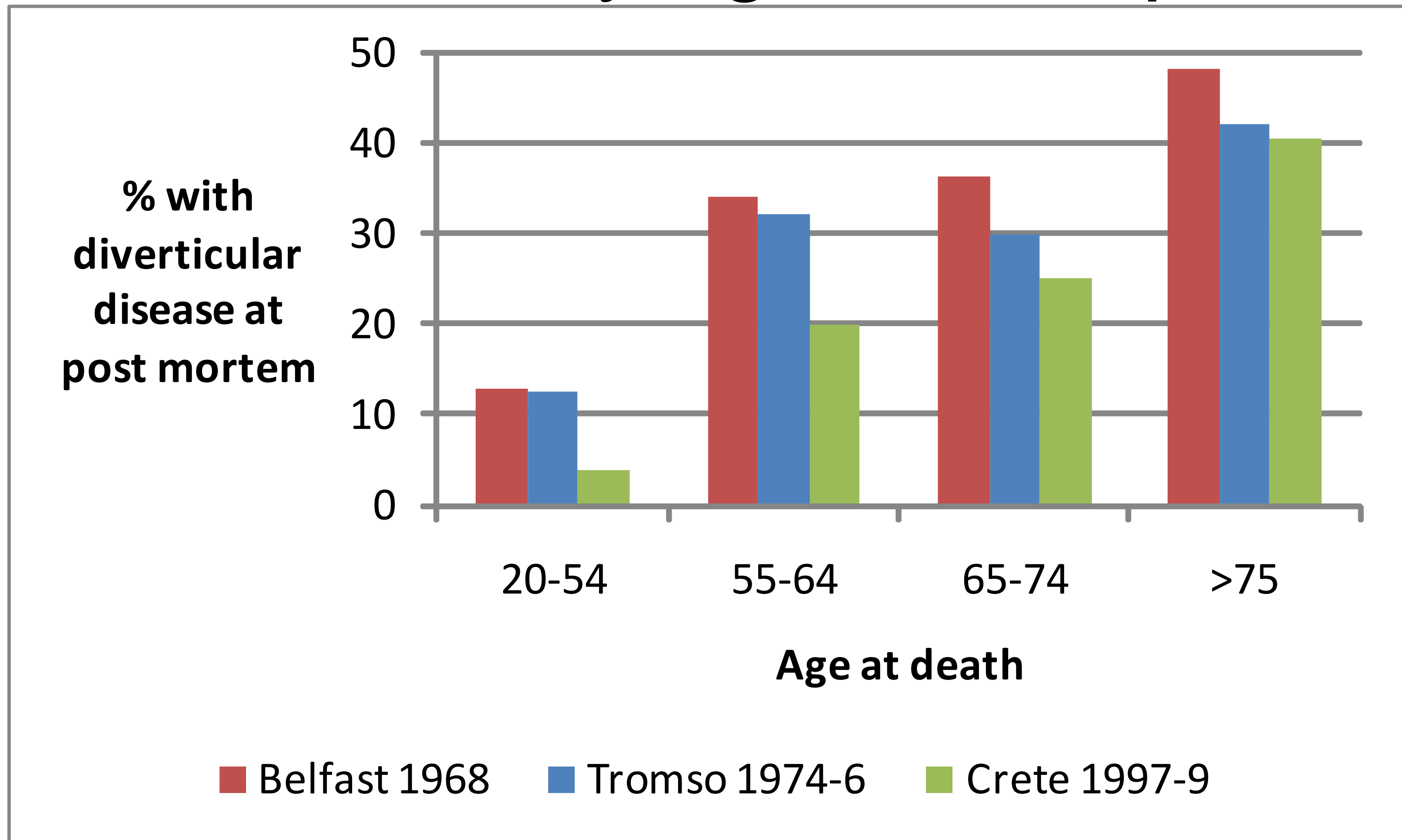

Redrawn from Commane DM et al (2009) World J Gastroenterol, 15, 2479

Prevalence of diverticular disease at death by age and region

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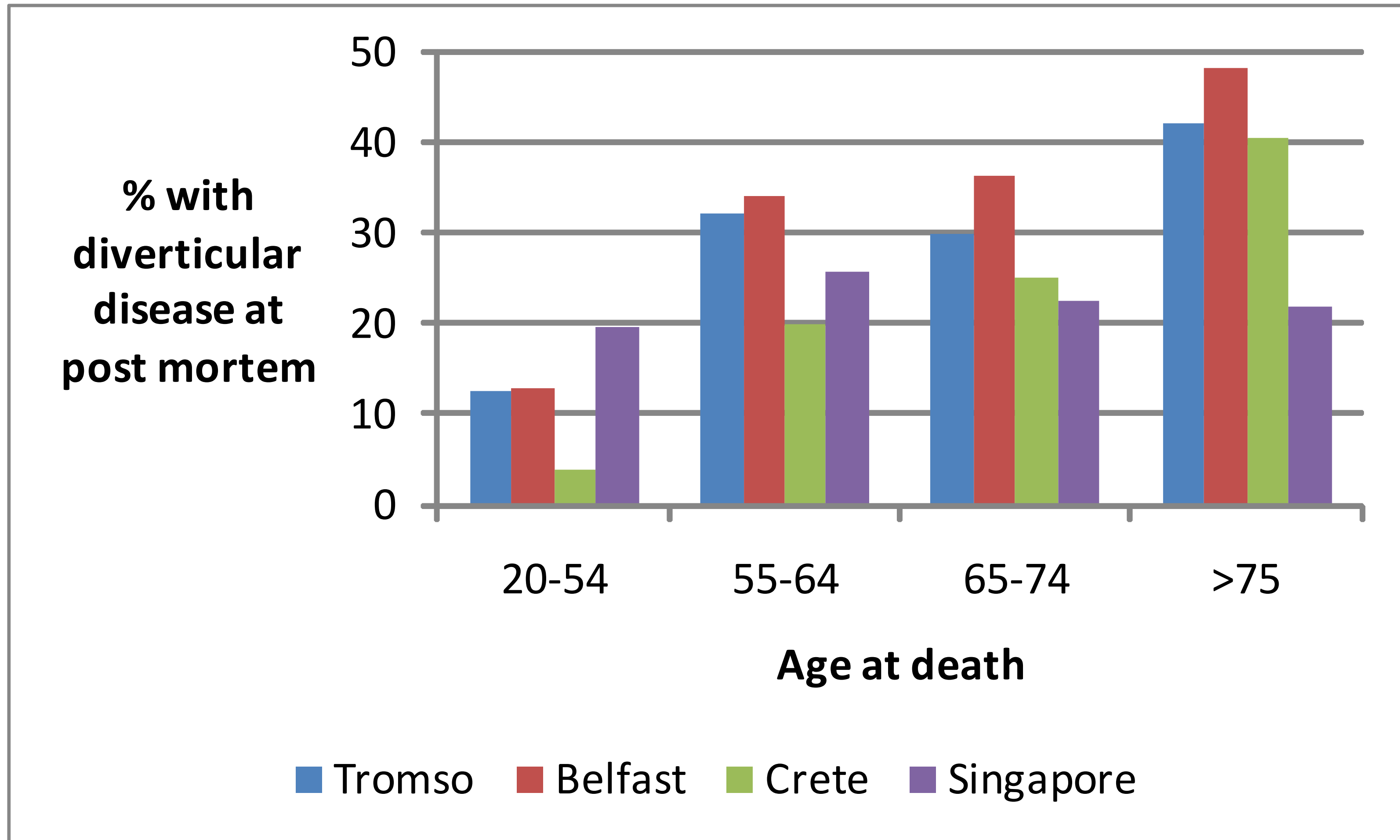

Redrawn from Commane DM et al (2009) World J Gastroenterol, 15, 2479

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

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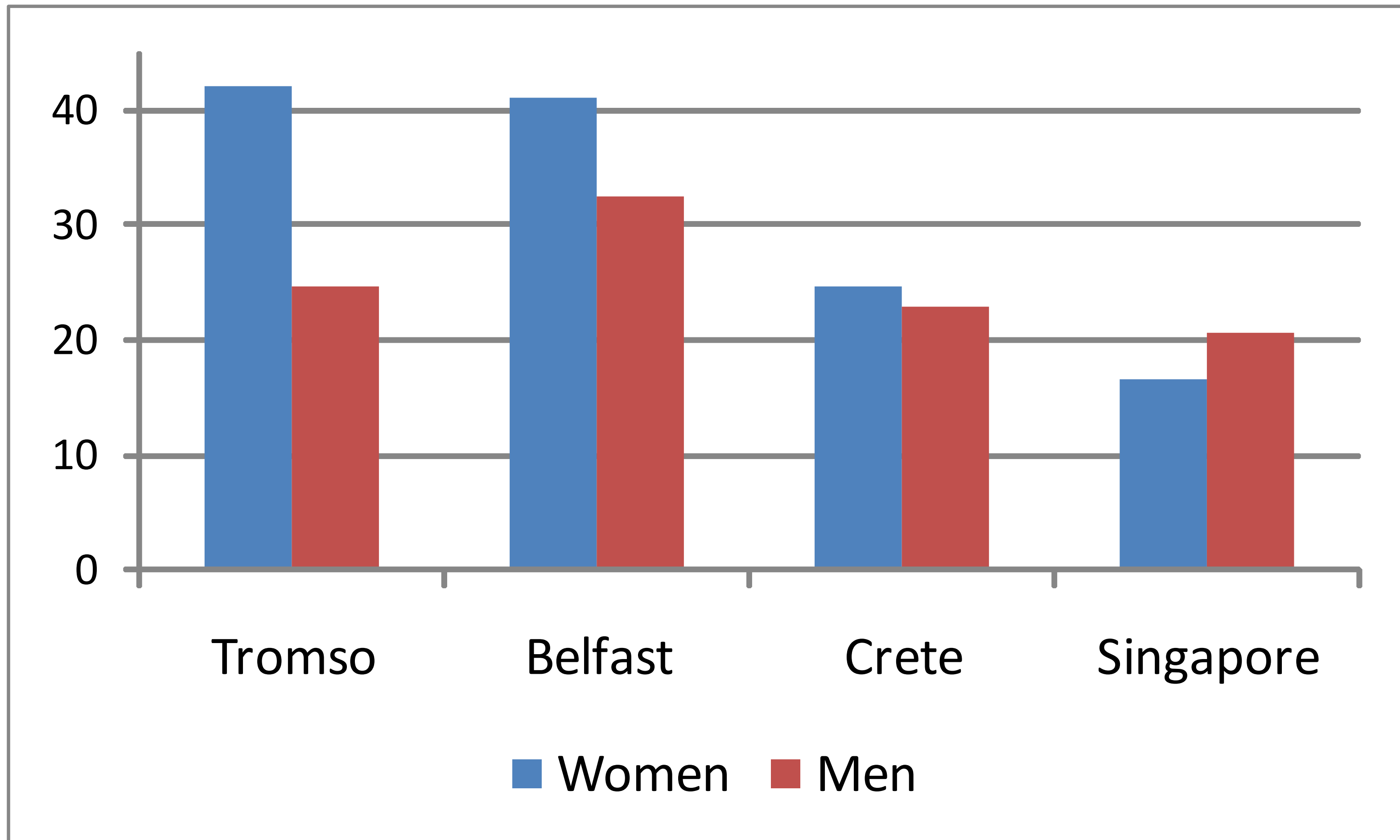

Redrawn from Commane DM et al (2009) World J Gastroenterol, 15, 2479

Proportion of women and men with diverticular disease treated surgically

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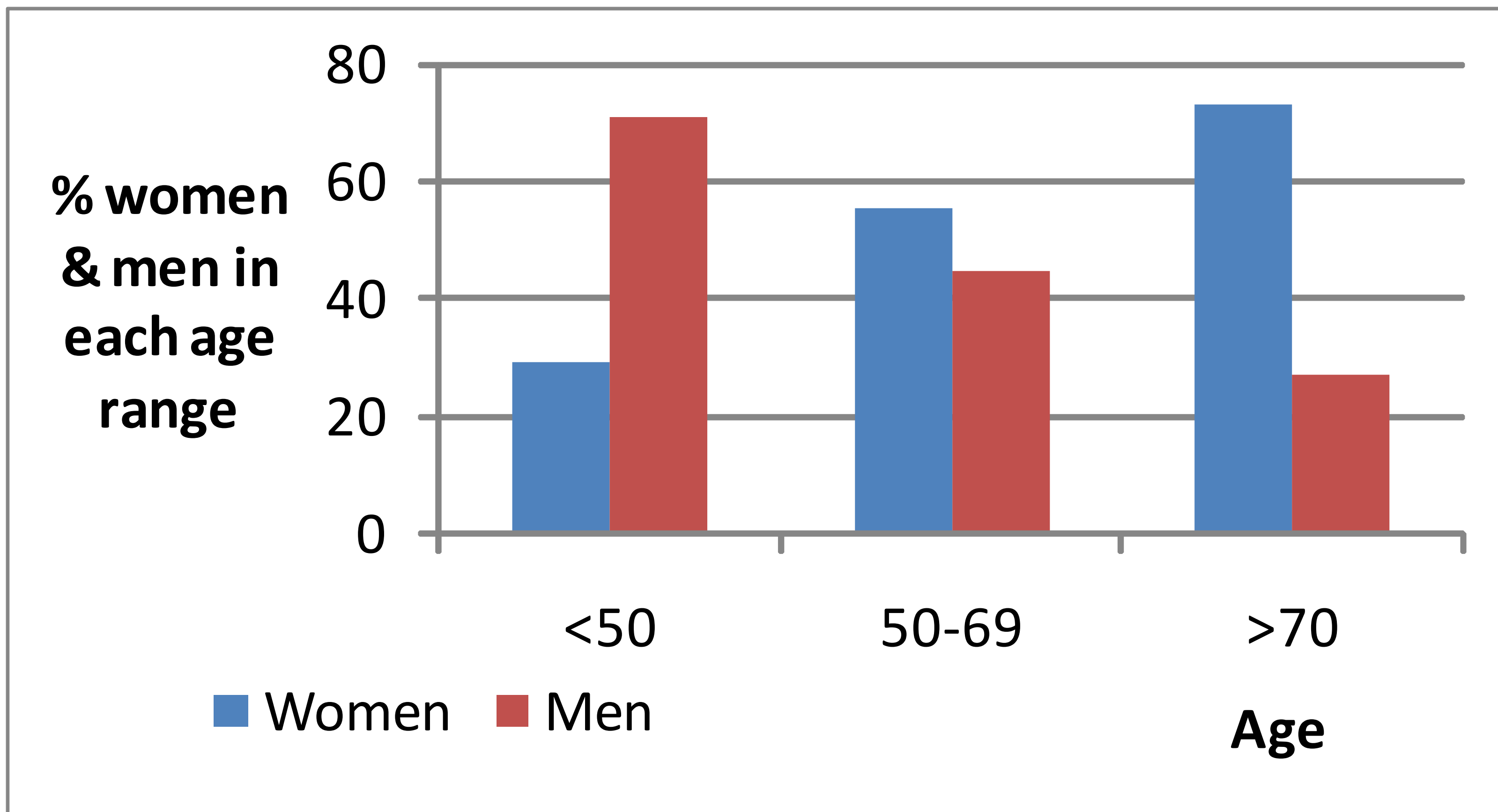

694 cases treated at Massachusetts General Hospital 1964-83
Redrawn from Rodkey GV & Welch CE (1984) Ann Surg, 200,466

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

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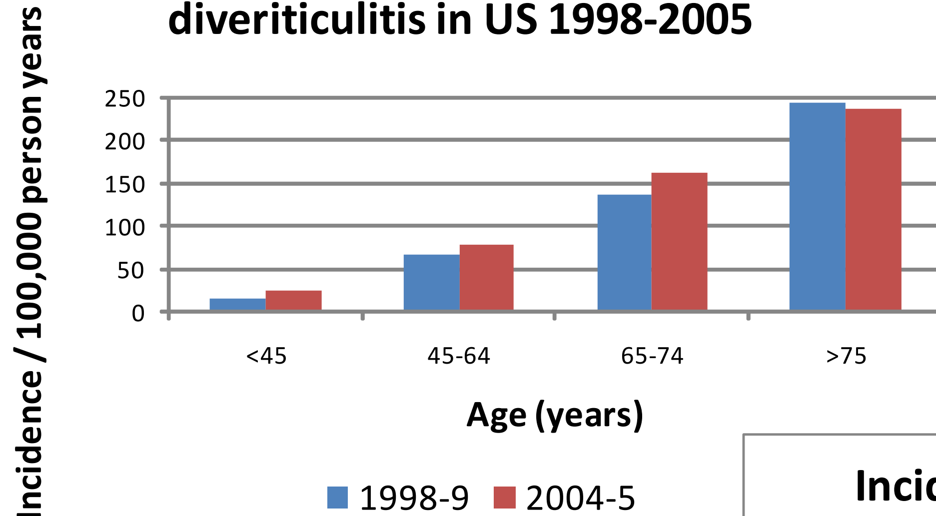
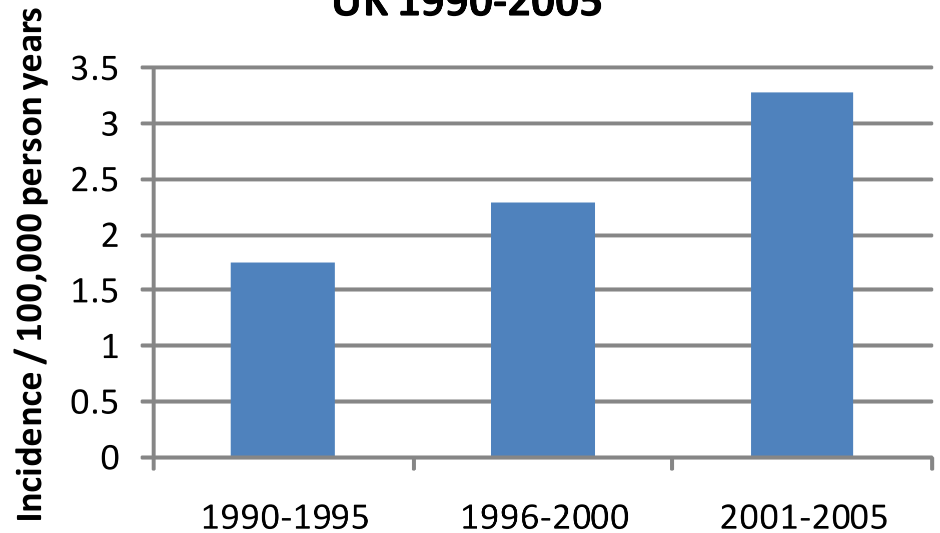


Data from Etzioni DA 2009, Ann Surg 249, 210



Data from Humes DJ et al 2009, Gastroenterology, 136, 1198

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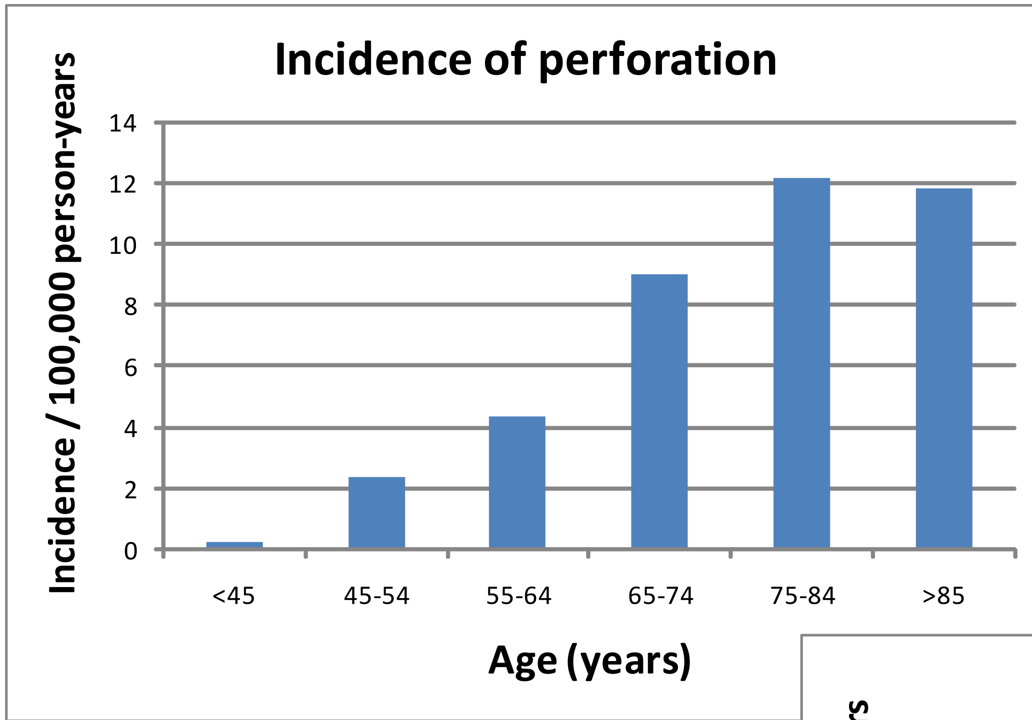

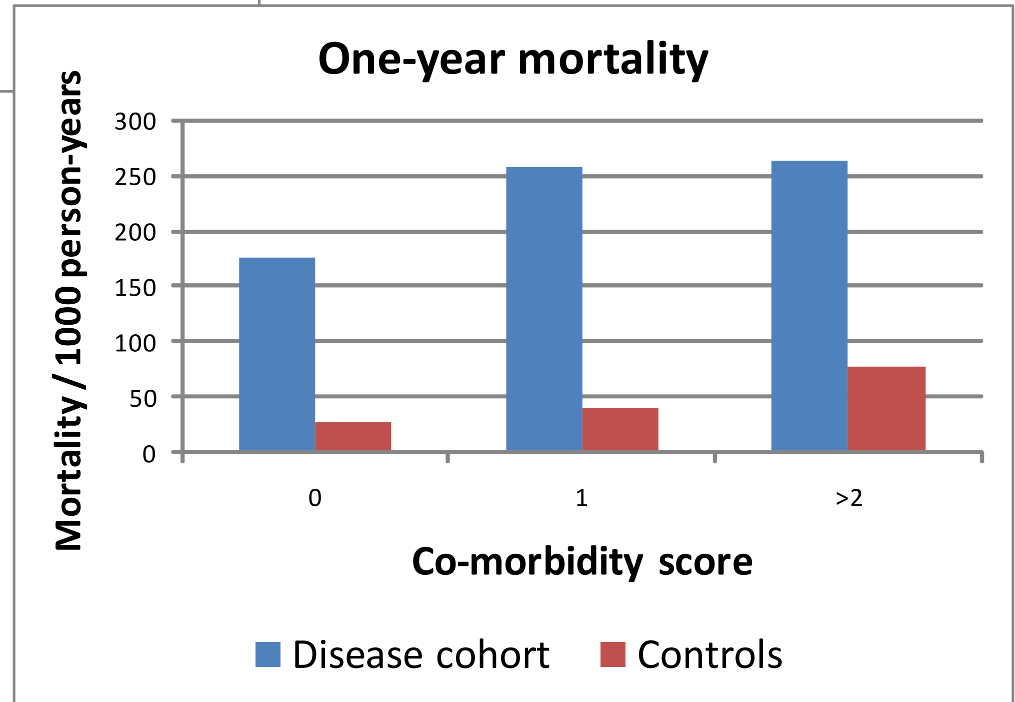

Both sets of data from Humes DJ et al 2009, Gastroenterology, 136, 1198

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

Reviewed by Commane DM et al (2009) World J Gastroenterol, 15, 2479

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

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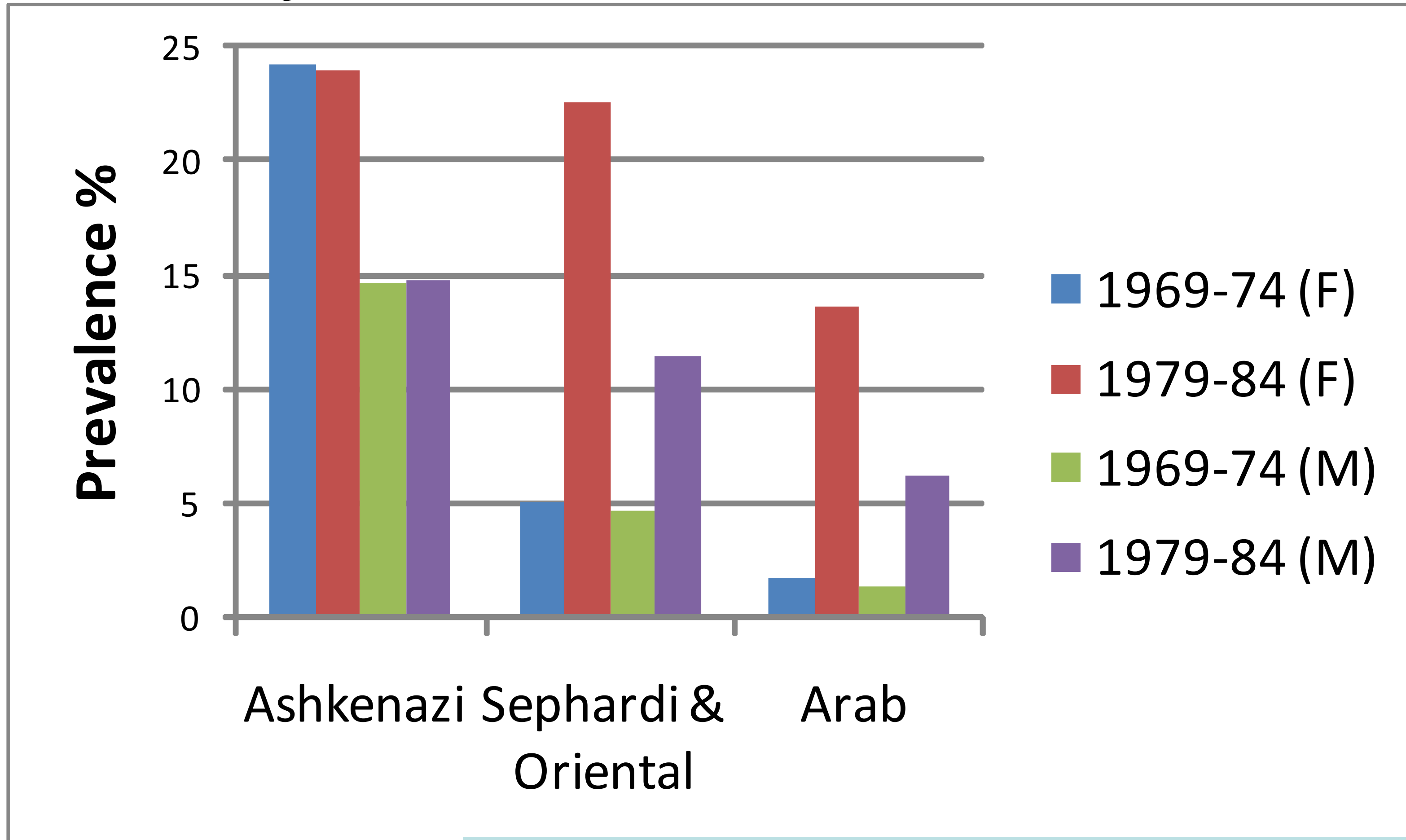

Data from Levy N et al 1985, Dis Col Rect 28, 416

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

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- 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

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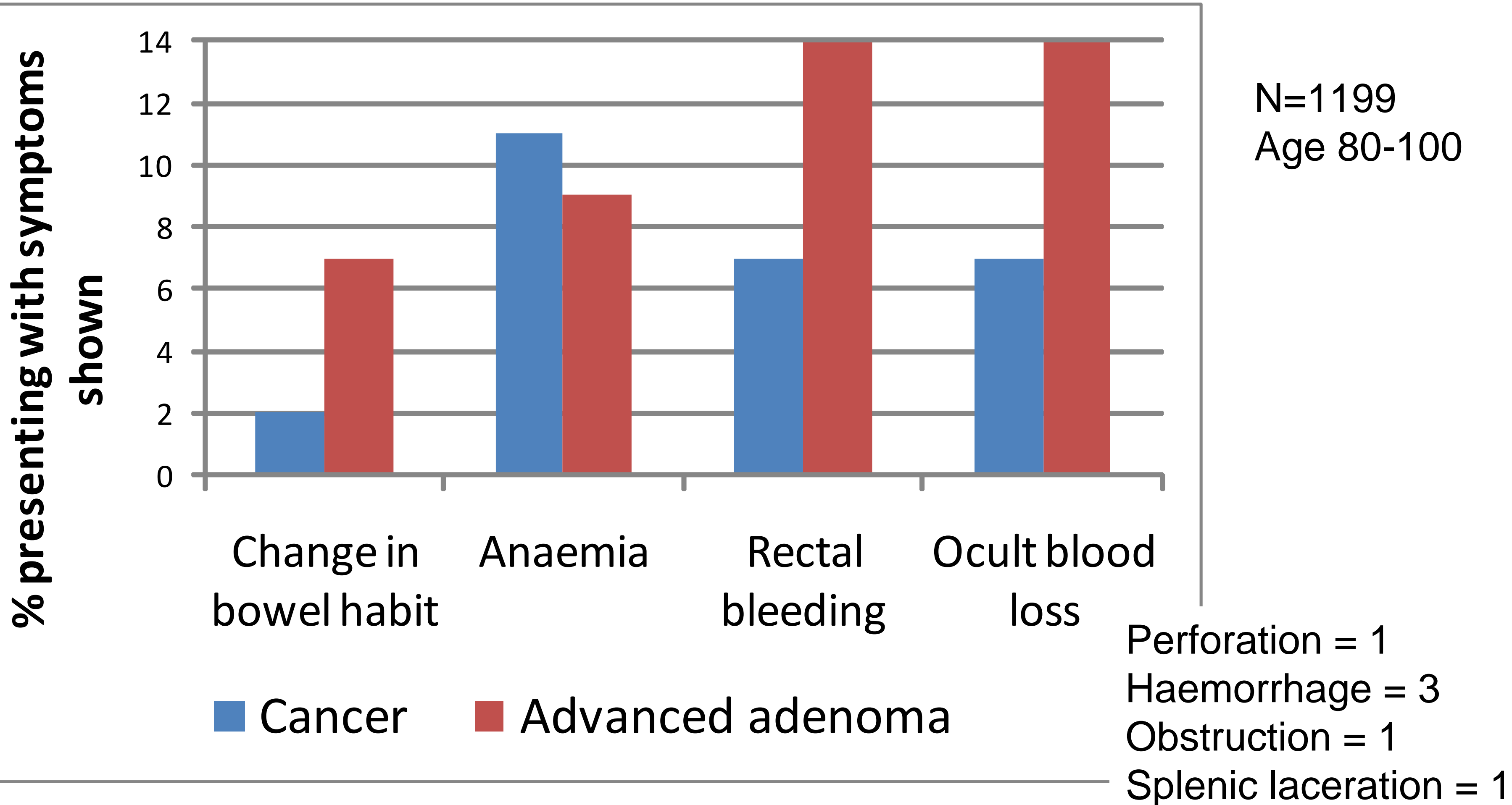

Duncan et al (2006) Dis Colon Rectum, 49, 646-651

Incidence of perforation per 1000 procedures (n = 39286)

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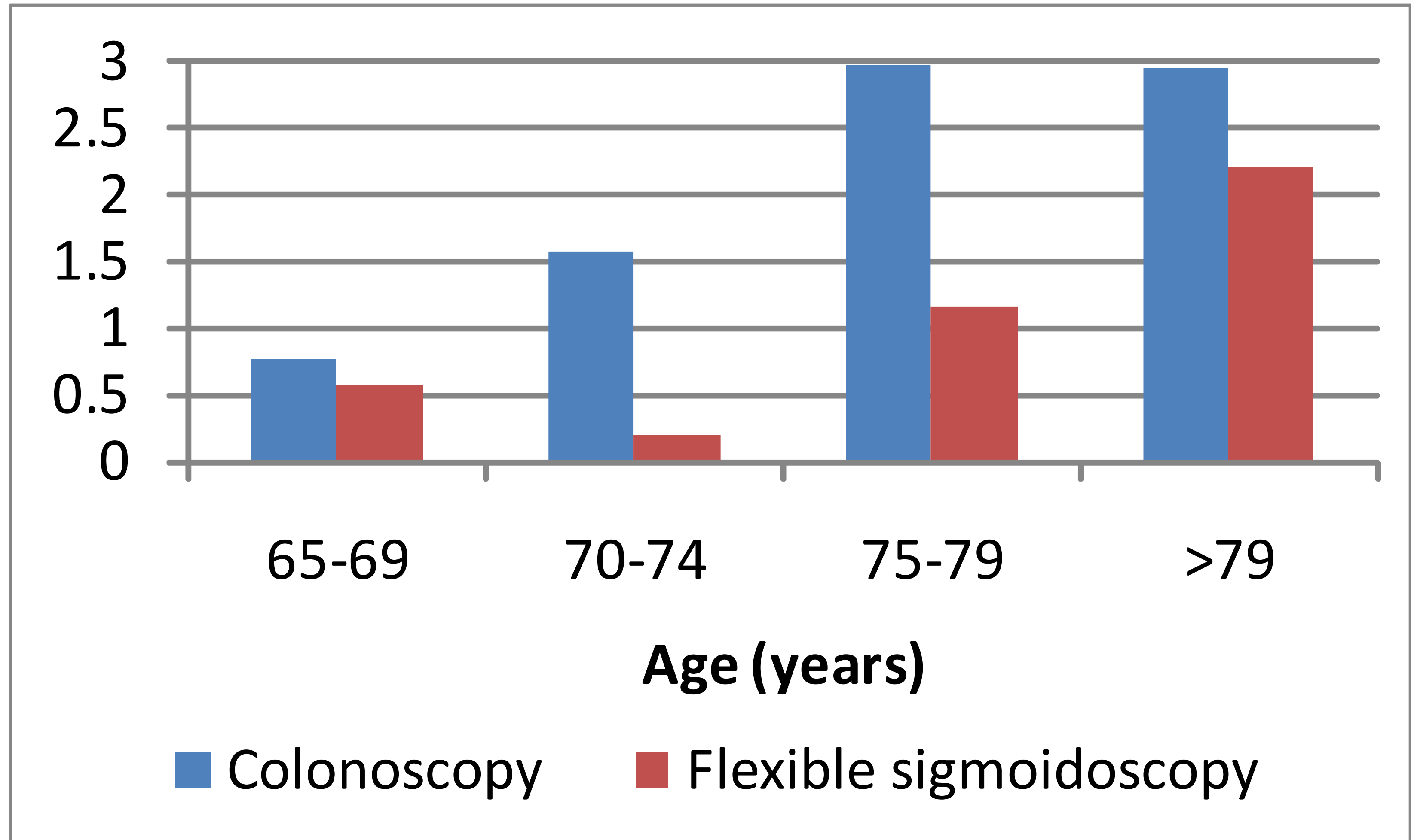

Gatto et al (2003) J Natl Cancer Inst, 95, 230-6

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

Bowles CJA et al (2004) Gut, 277-283

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

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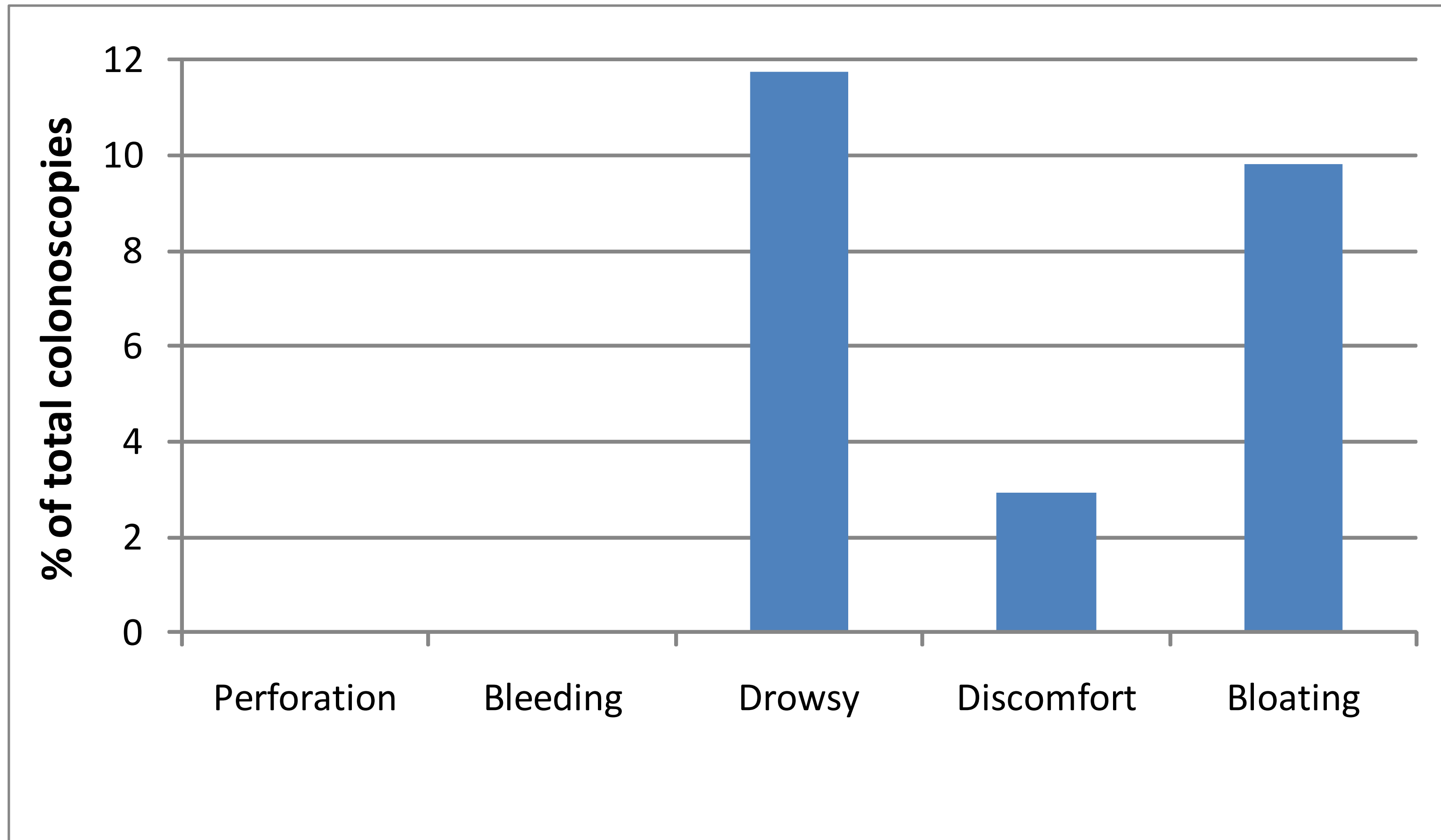

N = 100, Age 75-95 (average 82.1) years

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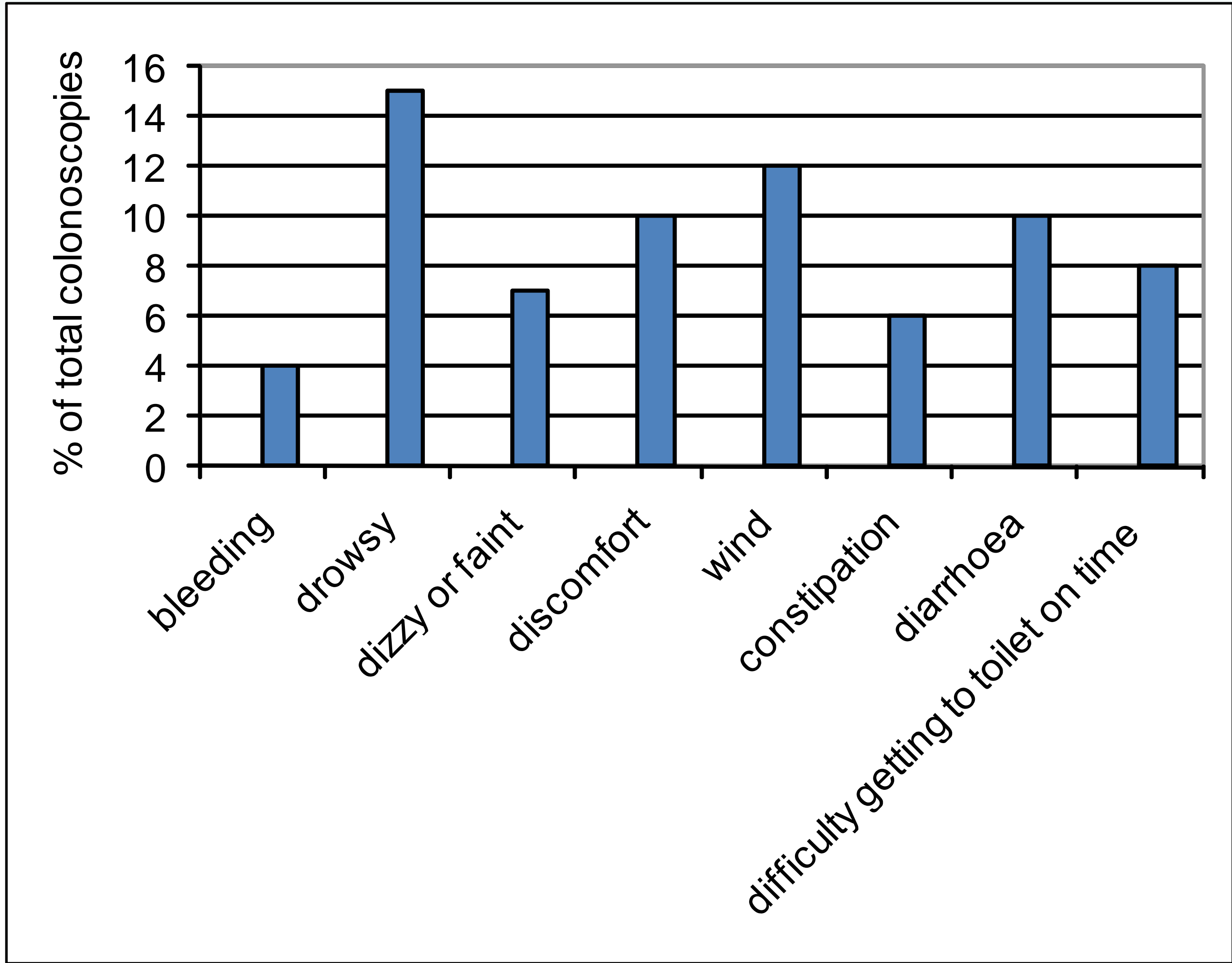
Symptoms detected at telephone interview



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.

Kahi C J et al (2007) Gastrointestinal Endoscopy, 66, 54-50

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?

BSG response to NPSA alert

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)?

BSG response to NPSA alert