Bowel Dysfunction in the Elderly – Constipation

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Presentation

• Prevalence and impact
• Presentation concentrates on Functional/Primary causes
• Normal and abnormal bowel function
• Assessment & working diagnosis
• Practical management advice

Declaration of interest: member of constipation in the elderly advisory board for Shire
Introduction

• Bowel dysfunction in the elderly is common (C & FI)

• Significant impact on QOL of an individual
  – Physical
  – Psychosocial
    • depression & social isolation
  – Financial
    • cost of pads, healthcare time & drug costs
    • placement decisions
    • laxatives £46 million per year England
    • ½ per week of district nurse time

• Carer stress


Prevalence of Bowel Dysfunction in the Elderly

- **Constipation**
  - 20% community dwelling elderly
  - Up to 50% hospitals
  - 2/3rds nursing home residence

- **Faecal Incontinence**
  - Estimated 1% community adults, 3-5% >65yr olds
  - 10% Residential homes
  - 30% Nursing home, up 60% EMI

- **Irritable Bowel Syndrome**
  - Prevalence 14-24% women & 5-19% men
  - 2% GP visits per year

Donald IP et al. A study of constipation in the elderly living at home. Gerontology. 1985. 31/2(112-8)
Bowel Care in Older People. Research into practice. Clinical Effectiveness & Evaluation Unit. Royal College of Physicians. 2002
Tobin GW, Brocklehurst JC. Faecal incontinence in residential homes for the elderly: prevalence, aetiology and management. Age and Ageing. 1986. 15:41-46
NHS. Faecal incontinence. NICE clinical guidance 49. June 2007
Consequences of Constipation

- Feeling of incomplete evacuation
- Faecal loading/impaction in rectum or colon
  - **REMEMBER** this can occur with soft stool!
- Abdominal pain/low back pain
- Flatulence/abdominal distension
- Nausea/vomiting/headache
- Bladder dysfunction
- Confusion/Agitation
- Poor appetite
- Malaise
- Prolapse—rectal/vaginal
- Haemorrhoids
- Is not proven to cause toxaemia
Classification of Constipation – Primary

- Functional constipation
  - Normal colonic transit (most common) - Normal stool frequency but symptoms suggestive of constipation, but different to IBS
  - Slow colonic transit (common in frail elderly) - May develop megacolon

- Irritable Bowel Syndrome IBS (C)

- Defaecation/ Pelvic Floor Disorders
  - Pelvic floor dyssynergia (or anismus, outlet obstruction) – poor coordination
  - Rectal dyschezia – reduced rectal sensation & tone leading to impaction
  - Rectocele & Enterocoele
  - Rectal Prolapse

- Dilated colon
  - Idiopathic Megacolon/ Rectum
  - Hirschsprung’s disease (rare)
## Classification of Constipation – Secondary

### Intrinsic
- Colorectal Cancer
- Diverticulosis
- Inflammatory Bowel Disease
- Anorectal disorders such as Anal Fissures & Haemorrhoids

### Post surgical abnormalities

### Neurological Conditions
- Spinal Cord Injury
- Multiple Sclerosis
- Parkinsons disease
- Stroke & cerebrovascular disease
- Dementia & frontal lobe injury

### Metabolic & Endocrine
- Diabetes Mellitus (diabetic autonomic enteropathy)
- Coeliac
- Chronic kidney disease
- Hypothyroidism
- Hyperparathyroidism
- Addison’s disease
- Amyloid
- Scleroderma
- Connective tissue disorders

### Electrolyte disturbances
- Hypercalcaemia
- Hypokalaemia
- Hypermagnesaemia
## Classification of Constipation – Secondary

### Psychological
- Depression & Anxiety
- Anorexia nervosa
- Bulimia
- Affective disorders
- Abuse

### Behavioural
- Lack of privacy and dignity
- Ignoring the ‘call to stool’
- Learning disabilities

### Dietary factors
- Such as irregular meals
- Fibre content
- Fluids

### Immobility & Frailty
- Causing weak abdominal & pelvic muscles

### Functional disability
- Due to age related co-morbidities
- Environment (common)
  e.g. hospital admission

*Secondary causes increasingly important with age*
Classification of Constipation – Secondary

Polypharmacy & Drug Side Effects
- Laxative abuse
- Anticholinergic agents:
  - Tricyclic antidepressants
  - Antipsychotics
  - Oxybutinin
- Diuretics:
  - Furosemide
- Analgesics:
  - Opiates, Tramadol, Codeine phosphate
  - NSAIDS
- Iron & calcium supplements
- Calcium-channel blockers:
  - Verapamil
- Aluminium-containing antacids
- Anti-parkinson’s drugs
- Anti-histamines
The Function of the Colon

1. Stool in liquid form as passes through Ileo-caecal valve
2. Stool passes along the colon by peristalsis
3. Colon absorbs water (& salts)
4. Stool arrives in solid form in the rectum
Peristalsis

- Muscular contractions of the gut, secretion of acids and enzymes are under **autonomic control**

- **Enteric autonomic nervous system** forms ganglionated plexuses with complex interconnections to smooth muscle, mucosa & blood vessels

- The ganglia receive extrinsic *excitatory* fibres from the vagus nerve (parasympathetic) & *inhibitory* fibres from the sympathetic fibres (ACh). There are also reflex circuits that react to stimuli

- Other transmitters in include 5-hydroxytryptamine (5HT), adenosine triphosphate (ATP), nitric oxide & neuropeptide-Y
Bowel Control

- Normal average transit time 3 days, (variance x3/d to x3/wk)

- Requires intact cerebral & spinal reflexes
- Enteric autonomic nervous system & proprioceptive sensation

- Two sphincters (internal & external) in the anus supplied by
  - Pudendal nerve & Hypogastric (autonomic) nerves formed from 2\textsuperscript{nd}, 3\textsuperscript{rd} & 4\textsuperscript{th} Sacral nerves

- Functioning pelvic floor muscles
The ‘Call to Stool’

- Stool distends into the rectum activating the sacral nerve reflex arc
- Sensation ‘Call to Stool’. Sensory discrimination between liquid, gas or solid
- The Pubo-rectalis muscle creates an angle of 60-105 degrees between the anal canal and the rectum by pulling forwards, this relaxes and the stool passes through to the external sphincter
- External sphincter relaxes creating funnel shape
- Strong waves of peristalsis from internal sphincter and lower bowel occur
- Assisted by raised intra-abdominal pressure
- Voluntary contraction of the external sphincter can also prevent leakage of flatus & stool and stop a stool from passing
The Ageing Bowel

- Age-related reduction in mesenteric neurones, but stool frequency unchanged in healthy ageing

- But more bowel evacuation difficulties, straining

- Multiple co-morbidities
- Functional disabilities
- Medication

- Women > men
Assessment

• History of presenting complaint
  – Previous bowel habit
  – Associated symptoms
  – ‘Bothersome factor’ & impact on QOL
  – Urinary symptoms

• Identify ‘Red Flag’ Symptoms
  – Rectal bleeding, Wt loss, Nocturnal pain or diarrhoea, anaemia & fever

• Relevant Past Medical History, Obstetric, Surgical & Cognition

• Detailed drug history including OTC
  – Response to previous laxatives

• Diet & Fluid intake
  – Response to dietary changes

• Toileting Regimes
Don’t forget to ask patients about their over the counter remedies!

Ordinary laxatives couldn’t free her from sluggishness and undigested fats—

She is a new woman since taking BILE BEANS LAXATIVE PLUS

Are you constipated, sluggish, troubled with indigestion?

Do you wake tired, liverish, out of sorts with everybody? It may be that a faulty digestion or sluggish liver is causing undigested fats and other harmful wastes to accumulate. These toxic food wastes can be the unsuspected cause of many common ills and of “auto-intoxication” (a disorder of the bloodstream). A single purpose laxative brings only limited relief. Attack the cause of the trouble with Bile Beans Laxative Plus—they contain an extra ingredient, sodium tauroglycocholate, recommended by doctors everywhere for breaking up and gently disposing of fats and other harmful residues. Take Bile Beans at bedtime—tomorrow you will look and feel your radiant best.

You’d be better taking BILE BEANS LAXATIVE PLUS

*) All Bile Beans now on sale are Bile Beans Laxative Plus.

CONSTIPATION MADE HUSBAND DRAGGY

He just didn’t feel like work or play. Always draggy and worn out—often cross and irritable. But like so many women, his wife knew about Nature’s Remedy (NR Tablets). She put him wise. He found out what an astonishing difference there was in this purely vegetable laxative. Not merely partial relief. Instead thorough, cleansing action that aided in ridding his system of poisonous waste, refreshed him, made him feel like a “million.” Try NR Tablets yourself. Note how gentle they are and non-habit forming. 25 tablets—25 cents at any drugstore.

FREE:

Beautiful Six-color 1957 Calendar-Thermometer. Also samples of NR and Tums. Send stamp for packing and postage to A. H. Lewis Co., Desk 975-28, St. Louis, Mo.
Take a Detailed Bowel History

• What is meant by ‘Constipation’?
  – Variation in good health (x3/day to x3/week)

• What are the most bothersome symptoms?
  – ‘Call to Stool’ or urge frequency
  – Stool frequency
  – Stool type
  – Straining
  – Feeling of incomplete evacuation
  – Abdominal pain
  – Bloating
  – Rectal/ Vaginal digitation
  – Remember the commonest cause of FI is Constipation
Assessment

• Objective evidence is useful
  – Bristol Stool Form Scale

• Keep a Stool diary

• Diet & Fluid diary
  – 1-2 weeks
  – Review fibre content
Examination

- Nutritional status
- Neurological (S3/4 sensation)
- Abdominal Examination

**Digital Rectal Examination (DRE)**
- Consent
- Chaparone
- RCN competency
- Assess for masses, stool consistency & colour, anal tone, puborectalis movement, & prolapse
DRE - What you are looking for?
Form a Working Diagnosis based on history and supported by examination

- Remember that Constipation is a *symptom* not a diagnosis look at predominant symptom profile. For example:

- **IBS (C)** – variability, abdominal pain
- **Slow gut transit** – very infrequent urge, infrequent hard stools, straining, life long
- **Rectocele** – straining, incomplete evacuation, digitation

However, in elderly often other confounding factors
Is there such a thing as the Goldilocks Stool?

- Agree individual realistic ‘Goals of Treatment’ based on symptom relief, not just stool type
- Trial of treatment & reassess

The Bristol Stool Form Scale

<table>
<thead>
<tr>
<th>Stool type</th>
<th>Stools of people aged 40–69 years</th>
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<tbody>
<tr>
<td></td>
<td>Men (n=510)</td>
</tr>
<tr>
<td>Lumpy</td>
<td></td>
</tr>
<tr>
<td>Type 1</td>
<td>1 3.8 13.4</td>
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<tr>
<td>Type 2</td>
<td>1 3.8</td>
</tr>
<tr>
<td>Type 3</td>
<td>1 3.8</td>
</tr>
<tr>
<td>Type 4</td>
<td>1 3.8</td>
</tr>
<tr>
<td>Normal</td>
<td></td>
</tr>
<tr>
<td>Type 3</td>
<td>3 23.2 38.6</td>
</tr>
<tr>
<td>Type 1</td>
<td>3 23.2 38.6</td>
</tr>
<tr>
<td>Type 2</td>
<td>3 23.2 38.6</td>
</tr>
<tr>
<td>Loose</td>
<td></td>
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<tr>
<td>Type 1</td>
<td>5 9.2</td>
</tr>
<tr>
<td>Type 2</td>
<td>5 9.2</td>
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<tr>
<td>Type 3</td>
<td>5 9.2</td>
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<td>Type 4</td>
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Normal* stools account for 57–62% of all stools

*Those least likely to evoke symptoms (types 3 and 4)


Rachel Bradley - BGS Bladders and Bowel Health 2012
Investigations

Very few investigations are required for Functional Constipation. Only use if diagnostic uncertainty, refractory to treatment or if surgery is being considered.

- Blood tests
- AXR & Colonic Transit Studies
- Proctoscopy & Sigmoidoscopy
- Barium studies
- Colonoscopy & CT Colonogram
- Defaecating Proctograms
- Neurophysiology: EMG & ano-rectal manometry
- Endoanal Ultrasound

Abnormal increase in anal pressure with no relaxation on bearing down Occuring in dyssinergic defaecation

Slow transit constipation is characterized by prolonged delay in the transit of stool through the colon.

Possible transit time study outcomes:

- Normal Transit Time: Majority of markers passed by Day 5
- Slow transit Time: Markers scattered throughout colon
- Pelvic floor disorder: Most markers in rectum or rectosigmoid*

*Note: this represents a possible scenario, but pelvic floor disorders are not always visible via transit study.

2. Evans et al. Int J Colorect Dis. 1992;7:15-17; Image developed for programme
Management Principles

• Exclude an organic and secondary causes

• Primary Constipation Management
  – Influence ‘what goes in’ (diet)
  – Bowel motility/ transit time
  – Consistency of what comes out (stool)
  – Evacuation problems

• Despite the prevalence of functional bowel problems in the elderly there remains a lack of good evidence based research on this subject. Many studies have been small, ill defined, relied on self-reporting of symptoms and have had unclear outcome measures
Dietary Advice

- **Diet & Fluids**
  - regular meals or snacks
  - improve fibre (insoluble v soluble)
  - 12-25g/day F, 30-38g/day M
  - adequate fluid intake
  - **Dietician** review for specialist/exclusion diets
    - e.g. gluten free, lactose intolerance
  - other natural foods
    - e.g. Aloe vera, prunes, kiwi, linseeds
    - ORTIS fruit cubes
Lifestyle Advice

Establish a regular bowel routine & re-educate the bowel

- Privacy & allow enough time
  ‘Behind closed doors campaign 2006’
  Especially important in Hospital

- Utilise gastro-colic reflex

- Improve toileting access & labelling
  – Especially for Dementia

- Toilet seat height & position

- ‘Brace and bulge’ technique

Gut Motility in Healthy vs. Slow Transit Constipation

Can suppression of Defaecation affect Colonic Motility?

- This study was done in 12 young males and showed that voluntary suppression of the urge to defaecate can affect bowel transit time over a 2 week period.

- Ask patients about toilet avoiding habits, response to urge

- What effect does toilet avoidance behaviour have in Dementia?

Physiotherapy

• Pelvic floor exercises (PFE) & Sphincter Exercises
  – Beneficial in both FI & C
  – Restores sensation and better evacuation
  – Gives better ‘control’
  – Useful in dyssinergia
  – Less likely to be effective with neuro abnormality or 3rd degree tear

• Biofeedback techniques
  • Need more long-term follow up studies
  • Post-partum education
Digital Stimulation & Digital Removal of Faeces (DRF)

- **Digital stimulation** be required in patients with chronic neurological conditions or a Rectocele

- **DRF** should **NO** longer be part of routine clinical practice as recognised complications
  - Local damage
  - Autonomic dysreflexia
  - May require sedation or GA
  - **RCN & ACA guidelines**
  - Exceptions some chronic neurological diseases
Drug Treatment for Constipation

- Consider when lifestyle factors don’t work
- Treatment tailored to the individual
- Several drugs or dose adjustments may be required
- Monitor effect using Bristol Stool Form Scale & individual symptoms

Bulk laxatives
Stimulant laxatives
Osmotic/Softener laxatives
Suppositories & enemas

Petticrew M. HTA 1997; Vol 1:No13. Systemic review of the effectiveness of laxatives in the elderly
Drug Treatment for Constipation

Bulk Laxatives

• Bran, Ispaghula (Fybogel, Regulan), methylcellulose (Celevac) & sterculia (Normacol)

• Action increase faecal mass which stimulates peristalsis via stretch receptors in the mucosa

• Useful 1\textsuperscript{st} line small, hard stools, diverticular disease & IBS

• Take several days to work

• Must be taken with plenty of water

• Well tolerated

• Except avoid in megacolon as can make slow gut transit worse
• Several small RCTs comparing Bulk laxitives in elderly with placebo or normal diet.

• In this study 10 community dwelling elderly patients
• Reduced gut transit time, increased stool frequency
• However, no effect on pelvic floor dysinergesia

Cheskin et al. JAGS. 1995; 43(6)666-9
Drug Treatment for Constipation
Stimulant Laxatives

- Anthraquinones (*Senna, Manevac, Dantron/Co-danthramer*) and diphenylmethane cathartics (*Bisacodyl, Sodium Docusate*)

- Stimulate colonic nerves (myenteric plexus)
- SEs abdominal cramps, diarrhoea, hypoK & urine discolouration
  
  - *Senna*
    - Action 6-12hrs
    - Useful short term/acute constipation
  
  - *Danthron*
    - Palliative care only (potentially carcinogenic)
  
  - *Sodium docusate*
    - Acts as a softener & stimulant
  
  - *Castor oil & cascara* are no longer used
    - unpredictable & dramatic results

- Improved quality of life among patients given bisacodyl for constipation, compared with those given placebo

- Combination of softener and stimulant institutionalised elderly beneficial

Drug Treatment for Constipation
Osmotic/Softener laxatives

- Sugars (*Lactulose, Sorbitol*), purgatives (*Magnesium hydroxide, Epsom salts*) and macrogols/polyethylene glycols (*Movicol*)
  - Draw water into stool, increase bulk & stimulate colonic motility. Require plenty of water

  - *Lactulose*
    - Dissachardide, not absorbed, low faecal pH discourages growth of ammonia-organisms, therefore useful in liver patients
    - Not very effective & takes 2-3 days to work
    - SEs flatulence & cramps
  - *Movicol PEG+E*
    - Contain electrolytes, more balanced solution, less dehydrating
    - Useful for more resistant cases
    - ONLY oral lax recommended for *faecal impaction*
  - *Magnesium Hydroxide*
    - useful short term/rapid use only
• PEG trials in elderly showed increased stool frequency and less straining versus lactulose
• Studied in community dwelling elderly, institutions
• Study in Parkinson’s Disease showed benefit
• Useful for slow gut transit
• Licenced orally for faecal impaction

Attar et al. 1999. Gut. Comparison of a low dose polyethylene glycol electrolyte solution with lactulose for treatment of chronic constipation
Gruss et al. 2004. Eur J Ger. 6 (3): 143-150
Rectal Enemas & Suppositories

- Enemas & Suppositories are absorbed well by rectal mucosa
- Administration can take time and requires dexterity
- Local & systemic SE

Stool softeners
- Microlax enema (sodium citrate)
- Phosphate enemas
  - AVOID in elderly/CKD as these cause electrolyte disturbances
  - Arachis oil (groundnut, peanut oil) enema
    - CAUTION in patients with nut allergy
    - Needs to be warmed to body temperature
  - Liquid Paraffin lubricant
    - to be avoided because of SE (incl seepage, irritant, granulomatous reactions & lipoid pneumonia, impair absorption of fat soluble Vits)

Stimulants
- Glycerol suppositories – rectal stimulation by mildly irritant action
- Picolax - bowel cleansing prep, stimulates nerves, act within 3hrs
Other Therapies

Prokinetic drugs

- **Procalopride**
  - Selective affinity for 5HT4 receptor agonists
  - NICE approved 3rd line agent in women. However, experienced prescriber and 4 weeks follow up required
  - SEs Headache & GI
  - Caution if history of IHD & arrhythmias

- ?Cholinomimetic drugs (e.g. carbachol, neostigmine) which increase motility
Rectal Irrigation Systems

• Traditionally used by spinal patients

• Rectal irrigation systems increasingly popular as an alternative to surgery for other patient groups
  – *Cardiomed*
  – *Peristeen* £70 + £122 accessory unit

• Requires dexterity & cognitive function

• CI IBD, obstruction

• Risk of perforation estimated 0.002% per irrigation


Sacral Nerve Stimulation

- Useful for UI, FI & C
- Minimally invasive technique
- Mechanism: Afferent nerve stimulation. Down regulates efferent nerves to pelvic floor, bladder & bowel via negative feedback sacral loop

- NICE approval FI, all ages
- A few small trials in Constipation
- But expensive ££
- Specialist centres only
- Careful selection

Surgery

- Only considered after conservative measures have been tried – e.g. sphincter repair
- Failure rate up to 50%
  - Careful selection & counselling required
  - Trials in elderly lacking
  - Co-morbidities affect outcomes

- Management of rectal prolapse remains a challenge
  - rectoplexy
- Rectocele: newer surgical techniques
  - Laparoscopic Rectoplexy, ?STARR
- Total colectomy & stoma formation last resort only
How to Avoid Bowel Dysfunction in Old Age - Prevention is Better than Cure

• **Promote healthy & active lifestyle**
  - Good childhood toilet training
  - Post-partum Pelvic Floor Exercises
  - Healthy ageing

• **Identify, assess & treat at risk groups early**
  - Care Homes
  - Immobility
  - Hospitalised patients – diet, mobility & illness
  - Simultaneous prescribing of laxs with opiates
A Multidisciplinary Approach

• Causes of bowel dysfunction in the elderly are often multi-factorial

• Patients present to many different health/social care professionals

• A multidisciplinary approach is vital with fully integrated services & clear referral pathway
  – ? via the continence service
Key Points for Clinical Practice

• Constipation is a symptom not a diagnosis

• Use your clinical skills to obtain a working diagnosis
• The Bristol Stool Chart is useful
• Set realistic ‘Goals of Treatment’ based on symptoms

• Address life-style factors
• Physiotherapy & biofeedback may be helpful
• Tailor medication to the individual

• Establishing a bowel management program can improve or cure the majority of patients
Thank you for listening