Constipation: Epidemiology, Assessment and Treatment Options

PROMOTING CONTINENCE AND MANAGEMENT OF INCONTINENCE CONFERENCE
WEDNESDAY 19TH APRIL 2017
PRESENTER: DR. MARY ROSE DAY, NURSE CONSULTANT
Objectives

Definition of Constipation & Faecal Incontinence
Epidemiology and Prevalence of Constipation
Economic Costs, Physical and Psychosocial Impact of Constipation
Etiologies of Constipation
Assessment
Treatment Options
Conclusions
Constipation is an acute or chronic condition in which bowel movement occur less often than usual or consist of hard dry stools that are painful or difficult to pass. Bowel habits vary but an adult who has not had a bowel movement in three days or a child who has not had a bowel movement in four days is considered constipated.

Faecal incontinence (FI) is the involuntary loss of liquid or solid stool that is a social or personal hygiene problem.

Types of FI: (1) Overflow incontinence; (2) Urgency faecal incontinence; (3) Functional incontinence; (4) Comorbidity-related incontinence; (5) Anorectal incontinence and (6) Dementia-related incontinence

(Medical Dictionary, 2017, Norton et al., 2010, Russell et al., 2017).
Epidemiology and Prevalence

Constipation is a common functional gastrointestinal (GI) disorder.

A systematic review on epidemiology of constipation reported worldwide prevalence rates ranging from 0.7% to 79% with an overall median of 16% and a median of 33.5% among older population (Mugie, Benninga & Di Lorenzo 2011).

Prevalence of self-reported constipation was 21% in community dwelling adults in Australia (Werth et al., 2017).

The prevalence of constipation in Norwegian nursing homes was 23.4%, and 67% and 1% used laxatives regularly (Blekken et al., 2016a).

Prevalence of constipation in nursing homes Ireland (n=6) was 38% (Neacy 2014).

Prevalence of faecal incontinence was 42.1% or 54% depending on the frequency labelling chosen in Norway (Blekken et al., 2016b).

Prevalence of laxative use was 15% in community dwelling older adults in Australia (Werth et al. 2017).
Economic Costs and Psychosocial and Physical Impact

Norway, with a population of approximately 5.2 million, spent 18.9 million € in 2014 on laxatives (Sakshaug, 2015).

In the UK over 17 million laxative items were prescribed in 2013 (Health and Social Care Information Centre, 2014).

Increased health care utilization such as 2.5 million physician visits, 100,000 hospitalizations in the United States annually.

National cost of constipation-related emergency department visits US increased by 121.4% from 723,886,977 in 2006 to 1.6 billion in 2011 after adjustment for inflation (Sommers et al. 2015).

Productivity losses, missed work days

Cost of medication and prescription charges for client/patient

Psychological impairment, social distress, altered interpersonal relationship, difficulty with intimacy, sexual dysfunction, impairment in quality of life (QOL).

Haemorrhoids, anal fissures and rectal prolapse
Etiologies of Constipation

Pelvic Floor Dysfunction

Slow colonic transit

Patients in whom no cause is identified can be defined as having normal transit constipation.

Psychosocial and behavioral issues are also important in the development of constipation. These issues need to be taken into consideration in the elderly, as some may have additional mechanisms that will impact bowel function.
Conditions that may Cause or Contribute to Constipation

- Bowel obstruction
- Irritable bowel syndrome
- Cancer
- Diverticular disease
- Dehydration
- Hospital admission
- Endocrine and metabolic disorders: hyperparathyroidism, hypothyroidism, chronic renal disease
- Neuromuscular disorders: – Parkinson's disease, MS
- Electrolyte disturbances: - Hypercalcemia, Hypokalemia, Hypermagnesemia
- Pregnancy
- Depression
- Reduced mobility and balance problems
- Urinary incontinence (Blekken et al. 2016)
- Medication
- Opioid-induced constipation (OIC)
Risk factors for faecal incontinence

Having one or more of the problems below is associated with an increased risk of faecal incontinence for older people:

- Urinary incontinence
- Diarrhoea – possibly due to laxatives, antibiotics, diet
- Multimorbidity or disability
- Faecal loading
- Functional disability
- Cognitive impairment
- Depression (Russell et al, 2017, p.114)
Table 1. Rome 111 criteria checklist. Functional constipation

Diagnostic criteria*

1. Must include two or more of the following:
   a. Straining during at least 25% of defecations
   b. Lumpy or hard stools in at least 25% of defecations
   c. Sensation of incomplete evacuation for at least 25% of defecations
   d. Sensation of anorectal obstruction/blockage for at least 25% of defecations
   e. Manual manoeuvres to facilitate at least 25% of defecations—e.g. digital evacuation (the removal of faeces by inserting a finger into the rectum and ‘pulling’ out faecal matter)
   f. Fewer than three defecations per week

2. Loose stools are rarely present without the use of laxatives

3. Insufficient criteria for irritable bowel syndrome

From: National Institute for Health and Care Excellence (NICE), 2015

* Criteria fulfilled for the last 3 months with symptom onset for at least 6 months prior to diagnosis

Bristol Stool Chart

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1</td>
<td>Separate hard lumps, like nuts (hard to pass)</td>
</tr>
<tr>
<td>Type 2</td>
<td>Sausage-shaped but lumpy</td>
</tr>
<tr>
<td>Type 3</td>
<td>Like a sausage but with cracks on its surface</td>
</tr>
<tr>
<td>Type 4</td>
<td>Like a sausage or snake, smooth and soft</td>
</tr>
<tr>
<td>Type 5</td>
<td>Soft blobs with clear-cut edges (passed easily)</td>
</tr>
<tr>
<td>Type 6</td>
<td>Fluffy pieces with ragged edges, a mushy stool</td>
</tr>
<tr>
<td>Type 7</td>
<td>Watery, no solid pieces. Entirely Liquid</td>
</tr>
</tbody>
</table>
Assessment

Holistic assessment to include a comprehensive history focusing on relevant clinical features and an individualized approach to include:

Bowel diary

History of bowel function (size, consistency, frequency), client/patient reported symptoms in conjunction with the Bristol Stool Form Scale

Food and fluid diary

Type, dose and duration of any previous laxative use

Medication review

Investigations if suspicion of an underlying gastrointestinal disorder i.e. weight loss, blood in stool, rectal bleeding, cramping abdominal pain, and nausea.

Specialist Examination

The digital rectal examination (DRE) is seen as an essential component of bowel assessment. This will check for faecal loading and internal problems, such as poor anal tone (Royal College of Nursing (RCN), 2012).

The assessment should be carried out by an appropriately trained, skilled and experienced healthcare professional (NICE, 2007, 2015).
## Medication that can contribute to Constipation

<table>
<thead>
<tr>
<th>Drug Type</th>
<th>Examples and Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-HT3 antagonists</td>
<td>Ondansetron</td>
</tr>
<tr>
<td>Aluminum salts</td>
<td>Antacids</td>
</tr>
<tr>
<td>Calcium channel blockers</td>
<td>Mainly verapamil</td>
</tr>
<tr>
<td>Calcium salts</td>
<td>Found in some antacids and phosphate binders</td>
</tr>
<tr>
<td>Drugs with antimuscarinic (anticholinergic)</td>
<td>Tricyclic antidepressants as well as selective serotonin reuptake inhibitor (SSRI) and serotonin– norepinephrine reuptake inhibitor (SNRI) antidepressants</td>
</tr>
<tr>
<td></td>
<td>Antipsychotics</td>
</tr>
<tr>
<td></td>
<td>Antimuscarinic anti-parkinsonian drugs, e.g. orphenadrine, benzatropine, trihexyphenidyl, and procyclidine</td>
</tr>
<tr>
<td></td>
<td>Antihistamines, especially older sedating antihistamines, e.g. chlorphenamine, promethazine, and cyclizine</td>
</tr>
<tr>
<td></td>
<td>Antispasmodics, e.g. propantheline and hyoscine</td>
</tr>
<tr>
<td>Non-steroidal anti-inflammatory drugs (NSAIDs)</td>
<td>Might cause diarrhoea</td>
</tr>
<tr>
<td>Opioid analgesics</td>
<td>Co-codamol, co-dydramol; also includes compound products</td>
</tr>
<tr>
<td>Phenothiazines</td>
<td>Drugs used to treat nausea and vertigo, such as chlorpromazine hydrochloride and prochlorperazine</td>
</tr>
</tbody>
</table>
Recommended constipation treatment flowchart for elderly patients (Emmanuele et al. 2016)

**Constipation in older people: A consensus statement**

If an effective treatment is found, adjust dose as necessary and repeat treatment as required. Consider withdrawal if patients regularly produce soft, formed stools. Withdrawal should take place after 2–4 weeks of normal passage of stool. Withdrawal should not be sudden and may take several months. For drug-induced constipation, continue for as long as constipating drug is used.

### Specific treatment scenarios

- **Patient unable to swallow**
  - Osmotic laxative administered orally as syrup
  - Administration of osmotic laxative via gastrostomy tube (if present)
  - Rectal administration of stimulant laxative
  - Enema (if continuous treatment not required)

- **Opioid-induced constipation**
  - Stop/replace medication
  - Normalize patient’s fluid and fibre intake and use an osmotic laxative and a stimulant laxative
  - Opioid antagonist (Naloxegol preferred if available)

### Recommended constipation treatment flowchart

- **Start**
- **Stop/replace medication**

**Is the patient receiving medication that is known to cause constipation?**

**YES**

**Can the medication be stopped/replaced?**

**YES**

- Advise patient on lifestyle measures:
  - Increase dietary fibre as tolerated
  - Eat regular meals
  - Drink sufficient fluids (correct deficient intake)
  - Increase mobility to a level conforming to age

**NO**

- If two laxatives from different classes have been tried at the highest dose without success for

**Osmotic laxative**

**Stimulant laxative**

**Suppositories/enema**
Management of Constipation in Adult Patients Receiving Palliative Care
National Clinical Guideline No. 10

Appendix 3: Constipation management algorithm

Figure 6: Constipation Management Algorithm
(Adapted from Lubash [2011] 17)

https://www.ncbi.nlm.nih.gov PMC/article e/T1/
Approaches

Client/patients advised on lifestyle changes such as diet and fluid modification and the importance of regular meals and benefits of increasing exercise.

Abdominal Massage can help with relaxation, reduce discomfort and pain, and improve the client/patient’s quality of life (Lämås et al, 2012).

Medication review and where possible, intake of medications that can constipate should be adjusted (NICE, 2014).

Laxatives - [http://www.hse.ie/eng/health/az/L/Laxatives/](http://www.hse.ie/eng/health/az/L/Laxatives/)
Laxatives

Bulk-forming - Increases water absorption properties of stool, example Fybogel

Stimulants - Stimulates the myenteric plexus triggering peristaltic contractions and inhibit water absorption. Examples are bisacodyl (Ex-lax®, Dulcolax®), castor oil, and senna (Senokot®).

Stool softeners - enable easier incorporation of water into the stool to keep it soft and easier to pass. An example of a stool softener is docusate sodium (Colace®).

Osmotic - Creates an osmotic gradient by retaining or drawing water into the gut lumen, example Movicol

bowel-cleansing preparations (British National Formulary (BNF) 2014).
<table>
<thead>
<tr>
<th>Laxatives</th>
<th>Mechanism</th>
<th>Potential advantages/disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulk-forming laxatives (bran, husk and methylcellulose Fybogel)</td>
<td>Absorb water from the intestinal lumen thereby softening stool consistency and increasing stool bulk</td>
<td>Most effective in individuals with normal transit constipation. Useful for people with small, hard stools when they cannot increase fibre intake. Take several days to work and can cause bloating, flatulence and abdominal pain (Waterfield, 2007). May interfere with the absorption of some medications commonly prescribed for use by older people, e.g. digoxin, warfarin, aspirin, iron and calcium.</td>
</tr>
<tr>
<td>Stimulant laxatives (Senokot and bisacodyl (Dulcolax))</td>
<td>Stimulate the myenteric nerve plexus thereby causing rhythmic muscle contractions and increasing intestinal motility</td>
<td>Bisacodyl is given only in tablet form due to effects on small intestine. Bisacodyl and senna should not be used if intestinal obstruction is suspected (Waterfield, 2007).</td>
</tr>
<tr>
<td>Faecal softeners (Docusate sodium, glycerol suppositories and arachis oil (Liu, 2011))</td>
<td>Prokinetic and antiabsorptive/secratagogic properties</td>
<td>Abdominal discomfort, dehydration, and loss of electrolytes due to peristalsis and diarrhoea (Waterfield, 2007).</td>
</tr>
<tr>
<td>Osmotic laxatives (lactulose, Movicol, Laxido and milk of magnesia)</td>
<td>Osmotic water-binding, bacterial mass, produces a softer stool and improves peristalsis</td>
<td>Allergies to nuts, i.e. arachis oil is nut based. They are usually well-tolerated and are recommended over other laxatives in older adults (Gallagher and O’Mahony, 2009). Adequate fluid intake is required. They are contraindicated in patients with diabetes and should be avoided in patients with the metabolic disorder galactosaemia. Side effects are flatulence, cramping, abdominal discomfort, nausea and vomiting, and diarrhoea in higher doses. Not very effective for severe constipation as they may take up to 3 days to take effect.</td>
</tr>
<tr>
<td>Macrogol osmotic agents</td>
<td>Macrogol works usually within 48 hours and can be used for faecal impaction (licensed for 8 sachets for 3 days) and severe constipation in older people who are more at risk of constipation. It can be used with diabetic patients. Macrogol is contraindicated in patients with severe inflammatory conditions of the intestinal tract (e.g. ulcerative colitis, Crohn’s disease and toxic megacolon)</td>
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Treatment Options

Bulk-forming laxatives are unsuitable for older people because of an associated need to increase fluid intake, osmotic laxatives are likely to be the most suitable laxative type for older patients (Emmanuel et al., 2016).

Among self-medicated laxatives, bisacodyl and sodium picosulfate (Dulcolax) are the only drugs which have been shown to considerably improve quality of life in patients with chronic constipation based on randomized clinical trials when treated over 4 weeks (Müller-Lissner, et al., 2017).

Evidence to support the use of probiotics is sparse since probiotics are regulated as foods and do not undergo the rigorous testing and approval required for medicines (NHS Choices 2014).

Other medication treatments

Prucalopride is recommended for women with chronic constipation who have used two laxatives for at least six months with no satisfactory improvement in symptoms (NICE 2010).

Lubiprostone is recommended for chronic constipation if two categories of laxatives have failed to be effective in the past six months (NICE 2014). Lubiprostone activates chloride channels in gastrointestinal epithelial cells, relieving symptoms of chronic constipation by improving intestinal secretion (NICE 2014).
Non-pharmalogical Treatment Options

Randomized controlled trials support the effectiveness of biofeedback therapy for severe, refractory constipation due to functional defecation disorders (Chiarioni 2016).

Abdominal massage perceived to be an effective treatment for constipation for people with Parkinson's Disease (McClurg et al. 2016).

Abdominal massage was pleasurable, and participants felt more comfortable with their bowel function following treatment (Lämås, Graneheim, & Jacobsson, 2012).

Abdominal massage can be a cost-effective option when laxatives do not have the desired effect (Lämås, Lindholm, Engström, & Jacobsson, 2010).

Bowel irrigation - Chronic constipation https://www.coloplast.ie/bladder--bowel/how-to-guides/bowel-irrigation-guides
Conclusion

Chronic constipation is a common and often overlooked problem.

Many people are vulnerable to chronic constipation owing to medication, underlying chronic disease, dietary changes and reduced mobility.

Physiologic categorization of the causes leading to constipation.

A holistic assessment and individualized approach has potential to improve treatment and management options.

Simple interventions such as reviewing fibre intake and fluid intake, regular meals and bowel routine can be implemented initially.

Fibre supplementation and osmotic laxatives are an effective first line of therapy for many people.

Nurses need to be knowledgeable about the various treatment options available so that they can inform and advise patients, offer individualised care and monitor the effectiveness of any interventions administered.
Thank you
References


References


National Clinical Effectiveness Committee (2015) Management of Constipation in Adult Patients Receiving Palliative Care National Clinical Guideline No. 10 Department of Health/HSE


National Institute for Health and Care Excellence (2015) Managing faecal incontinence in specific groups, Manchester


