Lower GI (Constipation and Diarrhoea) Workshop

ANSWERS

Learning outcomes

At the end of this session you should be able to:

- Utilise knowledge from lectures and the BNF to answer clinical based scenarios
- Consider responding to symptoms in relation to diarrhoea/constipation/other common lower GI conditions:
    - Ask appropriate questions to enable differential diagnosis
    - Recommend appropriate action
    - Provide appropriate pharmaceutical and non-pharmaceutical advice

Part 1 Case studies (30 minutes)

Task 1

Mrs Smith is a 40 year old lady and regular patient at your local community pharmacy. She wishes to purchase eye drops for her itchy, watery eyes-which you diagnose as dry eyes. She has no other eye conditions and has never experienced dry eyes before.

You've ruled out any obvious causes of dry eye (based on age and environmental factors).

Her list of medication is below.

Prescription medication:
• Gaviscon Advance Peppermint suspension (5-10ml after meals and at bedtime) • Ispaghula Husk 3.5g sachets (ONE to be taken TWICE daily PRN) • Loperamide 2mg capsules (TWO STAT, followed by ONE after each loose stool, maximum FOUR daily PRN)
OTC medication:
• Buscopan cramps (dose recently increased to 2 QDS due to abdominal discomfort)

1. Are there any potential pharmacological cause(s) for Mrs Smith's dry eye (discuss the mechanism of this side effect)?

To do this, you need to know the mechanism of action of the drug! The aim of this question is to get you to see the bigger picture.

Hyoscine (like other medications with antimuscarinic effects) binds to nicotinic acetylcholine receptors (nAChR) and prevents their activation by the natural ligand, Acetylcholine. Acetylcholine activation of these receptors promotes the parasympathetic system (rest and digest) which promotes tear production (lacrimation) AND peristalsis/related smooth muscle contractions which is why Hyoscine Butylbromide is useful for crampy IBS symptoms. When the nAChR is antagonised, tear production is reduced AND when muscarinic M3 receptors in GI tract are antagonised, smooth muscle contractions are reduced.

2. Mrs Smith has frequent abdominal cramping, altered bowel habit, bloating, flatulence, urgency to defecate, sometimes passing mucus in stools, abdominal pain is relieved by passing stools or wind, symptoms are worsened by eating (her blood test results and GI scans are all normal, no abdominal tenderness present on palpation).

   A. What conditions would you consider as part of a differential diagnosis?

IBS
IBD
Diverticular disease/diverticulitis
Coeliac disease
Lactose intolerance

   B. As part of a differential diagnosis, what key signs/symptoms would you expect her clinician to exclude?

Whilst many of these tests/signs/symptoms relate to GP/consultant roles, it is useful to have a basic knowledge of what is required as you may need it as while signposting/supporting patients.

- Blood test - ↑ WBC, ↑ platelets ↑ CRP (Diverticulitis/IBD), autoimmune antibodies (coeliac disease), blood sugars (as part of lactose intolerance test), ↓ iron (can indicate blood loss, e.g. IBD/diverticular disease, or malabsorption which could be caused by any of above conditions).
- Lactose exclusion diet (lactose intolerance).
- Endoscopy – signs of inflammation (IBD).
- Physical examination of abdomen to determine tenderness and pain (diverticular disease/diverticulitis, IBD).
- Body temp - >38 can indicate infection (diverticulitis).

C. Based on the information provided – what would be the most likely diagnosis for this patient?

IBS

3. Mrs Smith recently submitted a 2-week diary of her stool types to her consultant using the Bristol stool chart and reported >25% of stools at type 6/7 and <25% at types 1/2. What diagnostic criteria was being used AND what classification of the condition would be assigned to the patient based on her stool diary?

The Rome IV criteria are sometimes used in secondary care to assign a classification to IBS, based on their stool type over at least the previous 2 weeks.

IBS-D subtype

4. Given her specific condition, is there anything about her medication regimen that you would like to discuss with the prescriber AND explain your reasoning based on the mechanism of action of the medication(s)?

For IBS-D, which predominates with diarrhoeal symptoms, it may seem unusual to take a laxative (Ispaghula Husk). Any other class of laxative such as osmotic, stimulant, stool softeners etc would be contra-indicated.

Bulk forming laxatives mechanism of action involves drawing water into the GI tract and stool, which bulks up the faecal mass and consequently stimulates peristalsis. This bulkier stool formation directly reduces diarrhoeal symptoms.

5. Regarding the potential pharmacological cause(s) for the dry eye, what evidence-based medication change would you recommend to their GP (please list your evidence source) ?

The most recent full NICE guide -Irritable Bowel Syndrome in adults: diagnosis and management (CG 61) from 2008 states that antispasmodics can be prescribed, but it doesn't make specific medicine recommendations.

NICE CKS for IBS was written in September 2022, so is more up to date. It states that antimuscarinics like Hyoscine Butylbromide and Dicycloverine are more likely to cause adverse antimuscarinic effects than direct acting

intestinal smooth muscle relaxants such as Alverine Citrate, Mebeverine, Peppermint Oil.

Any of the above 3 are suitable substitutions.

6. Mrs Smith is going away for the weekend and wishes to bring along a more convenient product instead of her usual Ispaghula Husk sachets (which must be mixed with water). She has asked to purchase some Lactulose oral solution as a liquid is easier to take on the go. What is your response?

Answer to patient: Lactulose can increase gas production and worsen IBS symptoms. There are no liquid versions of bulk forming laxatives. The PIL for Ispaghula Husk also states that it must be taken straight away after reconstitution-so we cannot suggest an alternative. (NICE CKS 2022 recommends that Lactulose must never be used in IBS patients).

In addition, laxatives are typically only used in IBS-C. As discussed in question 4, her use of a laxative has nothing to do with increasing GI motility, but everything to do with bulking up stools. So using anything other than a bulk forming laxative will exacerbate her symptoms.

Task 2

Mr Harry Jacobs, a 65 year old male, complains of being constipated. He admits to being a bit of a 'salad dodger' and his current medication is:

84 Prochlorperazine 5mg tablets 1 TDS
28 Simvastatin 40mg tablets 1 OD
28 Lisinopril 20mg tablets 1 OM
60 MST Tablets 1 BD
28 Aspirin 75mg tablets dispersible 1 OM

A. What medicine(s) is/are likely to be causing the constipation?

- MST (opioid analgesic)
- Prochlorperazine (anti-muscarinic)
- Lisinopril (constipation SE of ACEI)

B. What treatment do you suggest? What are the advantages and disadvantages of each of these medicines?

Should not suggest bulk forming laxative; does not respond to opioid induced constipation!!

Recommend stimulant e.g. senna or bisacodyl

Advantages:

- relatively quick 12-hour action
- opposes the opioid induced reduction in GI motility

Disadvantages:

- Avoid long term use over concerns of weakening bowel.
- Effect can be strong in some patients (causing water and electrolyte loss)

Glycerol suppositories can be considered

Advantages:

- 30 minutes action
- Clears material already close to rectum, clearing passage for backed up material

Disadvantages:

- Patients may need help administering them
- Some patients don't like using them

Recommend a longer-term treatment alongside use of MST to prevent constipation. E.g. osmotic laxative (macrogol salts or lactulose).

Advantages:

- Safe for long term use because they do not act upon the bowel itself
- Generally have milder laxative effect than stimulants

Disadvantages:

- They take 1-3 days to work
- Relatively high doses may be needed to ensure GI motility
- Can also be high in sodium

C. What non-pharmacological advice could you give to prevent him getting constipated again?

- Water, fruit and exercise too!
- Increase his fluid intake; aim for at least 8 glasses of fluid daily (more if exercising/warm climate)
- Doesn't like salad, but explore other fruits and vegetable. Suggest dried fruits and fruit juices, and higher fibre cereals and breads
- Try to keep physically active; don't expect patient to join a gym, but try gentle walks, swimming if possible

- Target 30g dietary fibre per day (small changes and can easily be achieved within 3 meals per day).

Task 3-(feedback at end of session if time).

Clostridium difficile is a Gram positive, spore producing organism. People become infected by ingesting the spores either directly from infected individuals or from the environment highlighting the essential need for a clean environment. These infections may occur in a healthcare setting but can also occur at home without the patient ever going into hospital.

Infected individuals may demonstrate a spectrum of symptoms from mild self-limiting diarrhoea to severe colitis and toxic megacolon.

C. difficile infection is commonly precipitated by the use of broad-spectrum antibiotics, i.e. cephalosporins and quinolones. Older patients are most at risk especially those who are frail or with medical conditions.

Faecal specimens are tested for either glutamate dehydrogenase, an enzyme specific for carriage of C. difficile and one for the production of toxins A and B.

1. Mr P.Patterson, a 72 year old gentleman on your ward who has just had a positive result for Clostridium difficile. You can see from his stool chart that he has had 8 episodes of type 6 and 7 stools in the past 24 hours and is becoming dehydrated.

His current prescription is shown below:

- Dalteparin 5000 units OD
- Co-amoxiclav 625mg TDS – suspected UTI
- Lisinopril 10mg OD
- Aspirin 75mg OD
- Simvastatin 40mg ON
- Lansoprazole 30mg OD

A. What general considerations must you and the ward staff consider in the ongoing care of this patient?

- Inform the infection control team.
- Isolation within 2 hours of symptomatic diarrhoea.
- Sent to isolation ward – resolution of the episode and specific consideration of each case by the infection control team allows the patient to go back to the ward.
- Hand washing with soap/chlorhexidine and water – spiragel is ineffective.
- Gloves and aprons to be worn – barrier nursing.
- Visitors to wear PPE and undertake handwashing.
- Bowel chart.
- Sodium hyperchlorite 1:10 or Chlor-Clean followed by detergent anything that is not disposable, i.e. BP cuffs, moving and handling equipment and physio equipment.
- Hydrogen peroxide vapour treatment once area vacated.

B. What pharmacological treatment do you recommend for this patient?

Primary actions

- Stop PPI.
- Stop non-urgent antibiotics required for immediate patient management.
- Commence Vancomycin oral therapy – as patient suffering with severe diarrhoea (>6 motions/24hours), the recommended treatment is VANCOMYCIN 125mg PO 6-hourly for 10 days.

Optional discussion points

- Why is it possible to use IV metronidazole? – Metronidazole is excreted in the bile and by the inflamed colonic mucosa achieving faecal levels sufficient to treat C. Diff.
- What if the patient was unable to swallow or had an NG tube? – Use vancomycin injection diluted and administered down the tube or IV metronidazole. We often use the IV orally as the capsule coat takes time to dissolve and it GI transit is very quick the medication is not released appropriately.
- Why do we not use IV vancomycin? – IV vancomycin is not secreted into the GIT and is therefore ineffective against C.Diff infection.
- When would you expect to see improvement? – 48 hours with resolution by the 6th or 7th dose.

Part 2 Responding to symptoms (1 hour)

You will have prepared questions for the three patient scenarios labelled as patient 1, 2 or 3. We will role play these as a class to support your clinical decision making.

For each patient, consider what you may need to know to be able to help them. In the workshop, you will be given the answers from your 'patient' and you will need to make a decision. The workshop facilitators will act as your 'patient'.

STEP 1 (15 mins) – in your groups create a list of questions you wish to ask ALL 3 'patients'. We will then work through patient 1,2,3 chronologically.

Patient 1: Miss Sarah Green, 25 years, presents in pharmacy asking for something to help her go to the toilet.

(5 mins) – the groups will ask the 'patient' their questions (2 spokespeople per group).

(5 mins) – use the information garnered from step 2 to reach a group decision about the most appropriate treatment.

(5 mins) – spokespeople to state:

- Treatment choice (both pharmacological and non-pharmacological).
- Counselling points.
- Justification for your treatment choice.

Constipation: ignoring call to stool. Lifestyle advice and short-term laxative e.g. senna or lactulose dependent upon patient preference. Give patient pros and cons and reach a shared decision.

What would you do if you had young women repeatedly asking for senna? Professional decision making? How would they handle it? Why? Consider legal/ethical/clinical/professional.

Legal - short term/occasional use.

Ethical - duty of care to safeguard patients.

Clinical – can weaken bowel, can cause dehydration and electrolyte disturbances.

Professional – point out there is no evidence for weight loss with Senna, signpost to appropriate service.

Patient 2: Mr Joe Franks, 35 years, presents in pharmacy asking for something for diarrhoea.

(5 mins) – the groups will ask the 'patient' their questions (2 spokespeople per group).

(5 mins) – use the information garnered from step 2 to reach a group decision about the most appropriate treatment.

(5 mins) – spokespeople to state:

- Treatment choice (both pharmacological and non-pharmacological).
- Counselling points.
- Justification for your treatment choice.

Diarrhoea: diet induced: prevent dehydration, relieve symptoms and remove causation. If at risk of dehydration you can give ORS, but if eating and drinking normally not indicated. Can supply Loperamide for symptom management.

There has been conflicting evidence over the years as to whether we should 'let it run it's course'. Some have believed that slowing down GI motility can prolong the infection (and it is easy to see why!). This advice still stands for serious infections such as gastroenteritis or dysentery (unlike more common causes of diarrhoea, these conditions will also cause blood/mucus in stools, fever and should not be managed OTC). Understandably these conditions carry greater risk of dehydration with potential knock-on effects such as kidney impairment and electrolyte disturbances. Patients need more careful monitoring, may need antibiotic treatment and so we refer them.

It is now more commonly believed that for simple acute diarrhoea, it is the immune system acting on the causative agent that resolves the condition and has less to do with the cause 'working it's way through the GI system'. It is worth noting that NICE CKS for diarrhoea does not specifically recommend Loperamide (possibly because the data is quite conflicting over the benefit), yet Loperamide is licenced for the symptomatic relief of acute diarrhoea. So the best advice is to discuss the options with the patient, ascertain how urgent it is to reduce bowel movements-some patients will choose to have the medication so that they can return to work etc. In addition, treating with Loperamide will reduce the loss of water and electrolytes, so in the long run, in most instances, there will likely be a benefit to treating with Loperamide. They key is to identify the patient's preference, advise them of the pros and cons and reach a shared decision.

Patient 3: Mrs Helen Morgan, 34 years, presents in pharmacy asking to speak to the pharmacist about diarrhoea.

(5 mins) – the groups will ask the 'patient' their questions (2 spokespeople per group).

(5 mins) – use the information garnered from step 2 to reach a group decision about the most appropriate treatment.

(5 mins) – spokespeople to state:

- Treatment choice (both pharmacological and non-pharmacological).
- Counselling points.
- Justification for your treatment choice.

Diarrhoea with warning symptoms: Possible IBD. Refer to GP as a number of red flags are present.

- Unexplained blood in stool – this is a red flag symptom as per NICE CKS for diarrhoea. Bleeding — less likely to be a feature of irritable bowel syndrome or functional diarrhoea. Bleeding also indicates possible underlying inflammation.
- Severe diarrhoea is passing stool > 6 times per day (patient has passed 8 in 24 hours).
- Extreme tiredness also more indicative of IBD (? Anaemia).
- Rectal pain also suggests possible inflammation (patient has never had piles)
- Loperamide is only licenced for IBS-D attacks lasting up to 48 hours (patient has had symptoms 3 days, so we must refer).
- Patient has symptoms once or twice a month on an ongoing basis-suggesting that there has been an undiagnosed issue for some time.