



Practical Diagnostic Approach to Chronic Diarrhoea

Mashiko Setshedi 01 Feb 2019





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Guidelines for the investigation of chronic diarrhoea in adults: British Society of Gastroenterology, 3rd edition

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ABSTRACT

Chronic diarrhoea is a common problem, hence clear guidance on investigations is required. This is an updated guideline from 2003 for the investigations of chronic diarrhoea commissioned by the Clinical Services and Standards Committee of the British Society of Gastroenterology (BSG). This document has undergone significant revision in content through input by 13 members of the Guideline Development Group (GDG) representing various institutions. The GRADE system was used to appraise the quality of evidence and grading of recommendations.

These guidelines deal with clinical assessment in primary and secondary care of a patient with diarrhoea, the exclusion of cancer or inflammation, and detecting common disorders such as bile acid diarrhoea, microscopic colitis, lactose malabsorption or post radiation diarrhoea, together with rarer causes of malabsorption and surgical disorders as outlined in [figure 1](#). Options for therapy are not dealt with as it is beyond the remit of this guideline, nor has the

of Radiology, Primary Care Society for Gastroenterology, and nurse and patient representatives. Each main section was authored by a designated member of the GDG following a comprehensive review of the literature including NICE, American and European guidelines. This involved a review of electronic databases (Medline and PubMed) using keywords (in both British and American spelling) such as (((('diarrhoea-predominant irritable bowel syndrome' OR 'chronic diarrhoea' OR 'functional diarrhoea' OR 'loose stools' OR 'faecal urgency' OR 'faecal incontinence' OR 'stool frequency') AND ((diarrhoea[Title/Abstract]) AND (investigation OR investigate OR diagnostic OR diagnosis) AND "2000'(Publication Date): '3000'(Publication Date)) AND English(Language)) NOT case reports (Publication Type))). Additional terms related to the specific conditions mentioned in the text (eg, coeliac disease, bile acid diarrhoea or malabsorption and small bowel bacterial overgrowth). The time frame for literature review was from 2002 to April 2017. A total of 1292 key papers and relevant abstracts in English in peer-reviewed journals were identified.

Overview

Chronic diarrhoea is common (3-5% of population)

Considerable diagnostic challenge

Several hundred possible differential diagnoses

Table 1. Differential Diagnosis of Chronic Diarrhea

Watery

Secretory (often nocturnal; unrelated to food intake; fecal osmotic gap < 50 mOsm per kg*)

- Alcoholism
- Bacterial enterotoxins (e.g., cholera)
- Bile acid malabsorption
- Brainerd diarrhea (epidemic secretory diarrhea)
- Congenital syndromes
- Crohn disease (early ileocolitis)
- Endocrine disorders (e.g., hyperthyroidism [increases motility])
- Medications (see Table 3)
- Microscopic colitis (lymphocytic and collagenous subtypes)
- Neuroendocrine tumors (e.g., gastrinoma, vipoma, carcinoid tumors, mastocytosis)
- Nonosmotic laxatives (e.g., senna, docusate sodium [Colace])
- Postsurgical (e.g., cholecystectomy, gastrectomy, vagotomy, intestinal resection)
- Vasculitis

Osmotic (fecal osmotic gap > 125 mOsm per kg*)

- Carbohydrate malabsorption syndromes (e.g., lactose, fructose)
- Celiac disease
- Osmotic laxatives and antacids (e.g., magnesium, phosphate, sulfate)
- Sugar alcohols (e.g., mannitol, sorbitol, xylitol)

Functional (distinguished from secretory types by hypermotility, smaller volumes, and improvement at night and with fasting)

- Irritable bowel syndrome

Fatty (bloating and steatorrhea in many, but not all cases)

Malabsorption syndrome (damage to or loss of absorptive ability)

- Amyloidosis
- Carbohydrate malabsorption (e.g., lactose intolerance)
- Celiac sprue (gluten enteropathy)—various clinical presentations
- Gastric bypass
- Lymphatic damage (e.g., congestive heart failure, some lymphomas)
- Medications (e.g., orlistat [Xenical; inhibits fat absorption], acarbose [Precose; inhibits carbohydrate absorption])
- Mesenteric ischemia
- Noninvasive small bowel parasite (e.g., *Giardia*)
- Postresection diarrhea
- Short bowel syndrome
- Small bowel bacterial overgrowth (> 10⁵ bacteria per mL)
- Tropical sprue
- Whipple disease (*Tropheryma whippelii* infection)

Maldigestion (loss of digestive function)

- Hepatobiliary disorders
- Inadequate luminal bile acid
- Loss of regulated gastric emptying
- Pancreatic exocrine insufficiency

Inflammatory or exudative (elevated white blood cell count, occult or frank blood or pus)

- Inflammatory bowel disease
 - Crohn disease (ileal or early Crohn disease may be secretory)
 - Diverticulitis
 - Ulcerative colitis
 - Ulcerative jejunoileitis
- Invasive infectious diseases
 - Clostridium difficile* (pseudomembranous) colitis—antibiotic history
 - Invasive bacterial infections (e.g., tuberculosis, yersiniosis)
 - Invasive parasitic infections (e.g., *Entamoeba*)—travel history
 - Ulcerating viral infections (e.g., cytomegalovirus, herpes simplex virus)
- Neoplasia
 - Colon carcinoma
 - Lymphoma
 - Villous adenocarcinoma
- Radiation colitis

What is chronic diarrhoea?

? Stool form, frequency, consistency

Objective >200g of stool per day (unreliable)

Accepted definition

> 3 BMs per day

Bristol \geq 5


Chronic > 4 weeks


N.B: Exclude pseudo-diarrhoea (increased frequency, but normal consistency)

Bristol Stool Chart

Type 1  Separate hard lumps, like nuts (hard to pass)

Type 2  Sausage-shaped but lumpy

Type 3  Like a sausage but with cracks on its surface

Type 4  Like a sausage or snake, smooth and soft

Type 5  Soft blobs with clear-cut edges (passed easily)

Type 6  Fluffy pieces with ragged edges, a mushy stool

Type 7  Watery, no solid pieces. **Entirely Liquid**

Subtypes

OLD

Osmotic
Secretory
Inflammatory
Fatty
Dysmotility

NEW

**Watery (osmotic,
secretory, dysmotility)**

Inflammatory

Fatty

Watery

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Bile acid malabsorption

Brainerd diarrhea (epidemic secretory diarrhea)

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Endocrine disorders (e.g., **hyperthyroidism** [increases motility])

Medications (see Table 3)

Microscopic colitis (lymphocytic and collagenous subtypes)

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(elevated white blood
cell count, occult or frank
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Invasive infectious diseases

Clostridium difficile

(pseudomembranous)
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Invasive parasitic infections
(e.g., ***Entamoeba***)—travel
history

Ulcerating viral infections
(e.g., **cytomegalovirus**,
herpes simplex virus)

Neoplasia

Colon carcinoma

Lymphoma

Villous adenocarcinoma

Radiation colitis

Approach - history

Describe diarrhoea

Onset?

Pattern

- continuous
- intermittent
- nocturnal symptoms

Associated features (pain, fever, gas etc)

Alarm features (new-onset diarrhoea, persistent blood in stool, unintentional LOW)

Approach - history

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Associations

- travel, food (dairy, sweeteners, FODMAPS, gluten, alcohol, caffeine, liquorice)

Past medical history

Family hx (IBD, coeliac disease)

Other medical conditions - thyroid, DM, collagen vascular disease, pancreatic disease

Previous surgery (e.g. SB resection, cholecystectomy)

Previous radiotherapy

Medications (over 700 implicated)

Table 3. Drugs Associated with Diarrhea

Osmotic

Citrates, phosphates, sulfates

Magnesium-containing antacids and laxatives

Sugar alcohols (e.g., mannitol, sorbitol, xylitol)

Secretory

Antiarrhythmics (e.g., quinine)

Antibiotics (e.g., amoxicillin/clavulanate [Augmentin])

Antineoplastics

Biguanides

Calcitonin

Cardiac glycosides (e.g., digitalis)

Colchicine

Nonsteroidal anti-inflammatory drugs (may contribute to microscopic colitis)

Prostaglandins (e.g., misoprostol [Cytotec])

Ticlopidine

Motility

Macrolides (e.g., erythromycin)

Metoclopramide (Reglan)

Stimulant laxatives (e.g., bisacodyl [Dulcolax], senna)

Malabsorption

Acarbose (Precose; carbohydrate malabsorption)

Aminoglycosides

Orlistat (Xenical; fat malabsorption)

Thyroid supplements

Ticlopidine

Pseudomembranous colitis (*Clostridium difficile*)

Antibiotics (e.g., amoxicillin, cephalosporins, clindamycin, fluoroquinolones)

Antineoplastics

Immunosuppressants

Approach – physical examination

Vital signs

General appearance – anorexia/bulimia

Oedema, lymph nodes

Thyroid mass

Skin rashes (DH), flushing

Abdomen – scars, tenderness, masses, organomegaly

Rectal exam - sphincter tone and squeeze, fistulae



Diagnostic objective

Make a positive diagnosis with minimal investigations

Exclude cancer or inflammation

Detect common but underdiagnosed disorders such as bile acid diarrhoea, microscopic colitis, lactose malabsorption or post-radiation diarrhoea

Initial approach

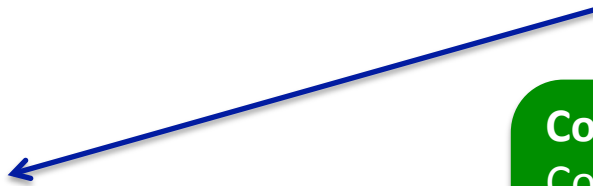
Hb, Fe if anaemic, CRP, albumin, TSH, coeliac serology **AND**
Stool MCS, ova, cysts, parasites, faecal calprotectin (>50g/g), consider FIT



If negative, and < 40, and no alarm features and meets Rome IV



Confirm IBS. If needs be, flexible sigmoidoscopy



If troublesome symptoms
despite treatment for IBS



Consider

Coeliac disease (g-scope + duodenal biopsies)
Microscopic colitis (colonoscopy + biopsies)
Bile salt diarrhoea (empiric bile acid sequestrants)

Who should be investigated further?

Abnormal initial tests

Normal first-line investigations with severe symptoms severe enough to impair QOL

No response to initial treatment/ongoing symptoms

Suspected organic disease

Watery

Inflammatory

Fatty

Other

Watery

**Osm > 125 mmol/kg
OSMOTIC**



History osmotic laxatives
Worse with dairy products
– hydrogen breath test
Consider coeliac disease

**Osm > 400 mmol/kg
CONTAMINATION/SPURIOUS**

**Normal Osm
DYSMOTILITY**



Apply Rome IV
IBS or functional diarrhoea
Exclude coeliac disease

**Osm < 50 mmol/kg
SECRETORY**



Stool analysis
Colonoscopy (microscopic
colitis ≥ 8 biopsies)
MRI/CT
TSH/ACTH
Tests for hormone-
secreting tumours
Laxative screen

Inflammatory

Stool analysis positive for RBCs, WBCs



Colonoscopy + biopsies ± FCP



Confirm IBD or infectious e.g. pseudomembranous, amoebic, CMV colitis

YES

NO

Treat appropriately

Investigate other causes

Fatty

Hb, Alb, Fe, Vit B12, folate

Malabsorption

Maldigestion

Gastroscopy + duodenal biopsies
MRE
VCE
DBE
SBBO – trial antibiotics

Faecal elastase
MRI pancreas (CT if MRI unavailable)

If all else fails, think constipation!

N.B: with overflow diarrhoea
Exclude faecal incontinence

- KUB
- anal manometry
- endoanal US



7-step approach

1. Is it diarrhoea? Establish that it is.

2. Is it functional or organic?

3. Is it colonic, small bowel or pancreatic disease?

4. Is it inflammatory, watery, fatty?

5. Determine specific cause.

6. Could it be constipation/pelvic pathology?

7. Could it be factitious (4-20%)?

Learning Points

It begins with a **focused**, comprehensive **history**

Minimal/non-invasive step-wise investigations to arrive at a diagnosis

Test **early** for coeliac disease

Most chronic diarrhoea is due to colonic abnormalities and generally not infectious

Some conditions are more common than we think