GASTROINTESTINAL TRACT INFECTIONS

Eradication of *Helicobacter pylori*

Indications:

The gastric bacterium *H. pylori* is widely present in the population but causes no harm in the majority of patients. Helicobacter treatment will benefit patients with *H. pylori*-induced duodenal (DU) or gastric ulceration (GU). Ten% of patients with non-ulcer dyspepsia will also have resolution of their symptoms. *H. pylori* treatment **does not** help gastro-oesophageal reflux disease (GORD).

In the community, dyspeptic patients without indications for endoscopy (see below) should either be treated with a course of proton pump inhibitors or tested for *H. pylori*, preferably with a non-invasive test, and treated if positive If the first strategy does not work the other should be tried. The presence of *H. pylori* should be confirmed before starting eradication treatment.

Testing for *H. pylori* is recommended in the following patients:

- Uncomplicated dyspepsia and no alarm symptoms, but unresponsive to lifestyle changes and antacids, following a single month treatment course with a proton pump inhibitor (PPI).
- Patients at high risk of *H. pylori* infection (e.g., older people, individuals of North African ethnicity, and those living in a known high risk area).
- Previously untested patients with a history of peptic ulcers or bleeds.
- Unexplained iron-deficiency anaemia after endoscopic investigation has excluded malignancy, and other causes (including cancer, idiopathic thrombocytopenic purpura, vitamin B12 deficiency) have been investigated.
- *Consider* prior to initiating NSAIDs in patients with a previous history of peptic ulcers or bleeds. (Note - *H. pylori* and NSAIDS are independent risk factors for peptic ulcers, so eradication will not remove all the risk)

Current NICE guidelines for referral for upper GI endoscopy for suspected upper gastrointestinal cancer:

Urgent (within 2 weeks) referral for upper gastrointestinal endoscopy in patients with:

- Dysphagia
- >55 years, with unexplained weight loss **and**:
    - Upper abdominal pain
    - Reflux
    - Dyspepsia

Non-urgent referral for endoscopy in patients with:

- Haematemesis (if not referred acutely for same day endoscopy, which would be the normal recommended action)
- >55 years with:
    - Treatment resistant dyspepsia
    - Upper abdominal pain **plus** low haemoglobin
    - Raised platelet count **plus** nausea or vomiting or weight loss or reflux or dyspepsia or upper abdominal pain
    - Nausea or vomiting **plus** weight loss or reflux or dyspepsia or upper abdominal pain

Tests for *H. pylori* include the urea breath test (UBT), stool antigen test, serology, and endoscopic biopsy-based tests. Most tests for *H. pylori* are only reliable if the patient has had no antibiotics or bismuth compounds within 4 weeks and PPIs have been stopped for at least two weeks. The exception is serology, but this is less accurate than other tests and often remains positive even after successful treatment;

Patient Information Leaflet: Guts UK

Treatment:
Treatment usually involves a triple-therapy regimen that comprises a PPI and two antibacterials.

The choice of antibacterials should take into consideration the patient's antibacterial treatment history. Macrolide and quinolone resistance is an important risk factor for treatment failure. Metronidazole or tetracycline and amoxicillin resistance is less important. Patients who have previously received treatment with clarithromycin, metronidazole and a quinolone should be referred for an endoscopy, culture, and susceptibility testing.

There is no benefit in trying the same regimen twice.

***Helicobacter pylori* Treatment Regimens (over two pages)**:

Treatment of *Helicobacter pylori* in patients with NO penicillin allergy		
	Treatment regimen[1]	**Duration**
First line	Lansoprazole 30mg twice a day **PLUS** Amoxicillin 1g twice a day **PLUS** Clarithromycin[2] 500mg twice a day	7 days
Second line (if ongoing symptoms after first line treatment, or has received previous treatment with clarithromycin for any infection)	Lansoprazole 30mg twice a day **PLUS** Amoxicillin 1g twice a day **PLUS** Metronidazole 400mg twice a day	7 days
Alternative second line (if previously received treatment with clarithromycin and metronidazole) ***NB If previous history of C.diff (PCR or toxin positive) levofloxacin requires Microbiology approval*** ^ **Note**: Fluoroquinolones should only be used when other antibiotics are inappropriate. If a penicillin allergy is recorded, the exact nature of the reaction should be clarified including whether other beta lactams (e.g., cephalosporins) have been previously tolerated. Fluoroquinolones can cause long-lasting (up to months or years), disabling, and potentially irreversible side effects, sometimes affecting multiple systems, organ classes, and senses. Please refer here for further information on MHRA alerts.	Lansoprazole 30mg twice a day **PLUS** Amoxicillin 1g twice a day **PLUS** Tetracycline 500mg four times a day **OR** (if tetracycline cannot be used) Lansoprazole 30mg twice a day **PLUS** Amoxicillin 1g twice a day **PLUS** Levofloxacin^ 250mg twice a day	7 days
Third line	Only offer longer antibiotic duration or third line therapy on advice from a specialist	

[1]See BNF and BNFC for appropriate use and dosing in specific populations, e.g., hepatic, or renal impairment, pregnancy, and breastfeeding.
[2]Withhold statins whilst on clarithromycin course.

Treatment of *Helicobacter pylori* in patients with a penicillin allergy		
	Treatment regimen[1]	**Duration**
First line	Lansoprazole 30mg twice a day **PLUS** Clarithromycin[2] 500mg twice a day **PLUS** Metronidazole 400mg twice a day	7 days
Alternative first line (for patients previously treated with clarithromycin for any infection) Long-term supply issue with Pepto-Bismol. Unavailable before July 2025. Consider second line option.	Lansoprazole 30mg twice a day **PLUS** Bismuth salicylate (Pepto-Bismol®) 262.5mg (2 chewable tablets) four times a day ** **PLUS** Metronidazole 400mg twice a day **PLUS** Tetracycline 500mg four times a day	7 days
Second line (if ongoing symptoms in patients who have not received previous treatment with a fluoroquinolone) ***NB If previous history of C.diff (PCR or toxin positive) levofloxacin requires Microbiology approval***	Lansoprazole 30mg twice a day **PLUS** Metronidazole 400mg twice a day **PLUS** Levofloxacin^ 250mg twice a day	7 days
Alternative second line (in patients who have received previous treatment with a fluoroquinolone) Long-term supply issue with Pepto-Bismol. Unavailable before July 2025. Seek specialist advice if no options appropriate.	Lansoprazole 30mg twice a day **PLUS** Bismuth salicylate (Pepto-Bismol®) 262.5mg (2 chewable tablets) four times a day ** **PLUS** Metronidazole 400mg twice a day **PLUS** Tetracycline 500mg four times a day	7 days
Third line	Only offer longer antibiotic duration or third line therapy on advice from a specialist	

**The use of Pepto Bismol® tablets in the eradication of *H. pylori* is off label, although there is a wide experience, and it is commonly used. Pepto Bismol® contains salicylates and should not be given to patients with aspirin or salicylate allergy or concomitantly with aspirin or salicylates. Common side effects include black tongue and stools.

[1]See BNF and BNFC for appropriate use and dosing in specific populations, e.g., hepatic, or renal impairment, pregnancy, and breastfeeding.
[2]Withhold statins whilst on clarithromycin course.
^ Note: Fluoroquinolones should only be used when other antibiotics are inappropriate. If a penicillin allergy is recorded, the exact nature of the reaction should be clarified including whether other beta lactams (e.g., cephalosporins) have been previously tolerated. Fluoroquinolones can cause long-lasting (up to months or years), disabling, and potentially irreversible side effects, sometimes affecting multiple systems, organ classes, and senses. Please refer here for further information on MHRA alerts.

If diarrhoea develops, *Clostridioides difficile* infection should be considered, and the need for treatment reviewed. See separate guideline for the management of *Clostridioides difficile*

The PPI may need to be continued at a ONCE daily dose for 4 weeks, or until healing is complete for large or complicated duodenal ulcers and all gastric ulcers.

Re-testing after treatment:
In patients with functional dyspepsia, routine retesting after *H. pylori* eradication is **not** recommended.

Retesting may be considered in the following circumstances:

- If compliance is poor, or there are high local resistance rates
- The patient has persistent symptoms, and the initial test was performed within 2 weeks of treatment with a PPI, or within 4 weeks of antibacterial treatment

- Patients with an associated peptic ulcer, MALT lymphoma, or after resection of an early gastric carcinoma
- Patients taking aspirin without concomitant treatment with a PPI
- Severe persistent or recurrent symptoms, particularly if not typical of gastro-oesophageal reflux disease

All GU or DU patients should be retested for *H. pylori* at least 4 weeks (ideally 8 weeks) after the end of antibiotic treatment and re-treated if still positive. Treated patients who did not have an ulcer (or who did not have an endoscopy) should be re-tested if symptoms recur. However, if they are having a further endoscopy for any indication (e.g., all GU patients have repeat endoscopy to ensure healing and exclude gastric adenocarcinoma) biopsy-based tests can also be used. Note the PPI will need to be stopped at least 2 weeks, and any antibiotics or bismuth compounds at least 4 weeks before *H. pylori* testing is carried out.

In treatment failures:
After using the regimens above or where the regimens cannot be used due to antibiotic hypersensitivity or contra-indications, refer to gastroenterology for review and consideration of endoscopy for culture and sensitivity testing. Give full information on previous regimens used and antibiotic sensitivities.