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SYMPTOMATOLOGY AND GENERAL PRINCIPLES OF TREATMENT OF GASTRITIS, GASTRIC ULCER AND DUODENAL ULCER

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ABSTRACT

Gastritis and peptic ulcer disease are frequently encountered problems in clinical medicine. They affect the upper gastrointestinal tract and may cause anything from mild indigestion to serious complications such as gastrointestinal bleeding or perforation. Gastritis means inflammation of the stomach lining, while a peptic ulcer is a deeper sore that develops in the stomach or duodenum. The two most important causes are Helicobacter pylori infection and the use of non-steroidal anti-inflammatory drugs (NSAIDs). Patients may report upper abdominal pain, nausea, bloating, early fullness or vomiting, although some have no symptoms at all. Because these complaints are not specific to one disease, diagnosis may require H. pylori testing and upper gastrointestinal endoscopy. Treatment focuses on correcting the cause, reducing acid, allowing the mucosa to heal and preventing the disease from returning.

Keywords: Gastritis, peptic ulcer disease, gastric ulcer, duodenal ulcer, Helicobacter pylori, NSAIDs, dyspepsia, proton pump inhibitors

I.

Introduction

The stomach produces acid and digestive enzymes to help break down food. These substances are strong enough to damage tissue, so the stomach and duodenum rely on several protective mechanisms, including a mucus-bicarbonate layer, a healthy blood supply and intact surface cells. Problems arise when these defences are weakened or the damaging factors become too strong.

Gastritis describes inflammation of the stomach lining. Gastropathy is a related term used when the lining is damaged but there is little inflammation. A peptic ulcer is different: it is a deeper break in the lining of the stomach or duodenum. H. pylori infection and NSAID medicines account for a large proportion of peptic ulcers. Smoking and serious illness can also affect healing or increase the risk of complications. Finding the cause matters, because simply treating the pain may not prevent the problem from coming back.

Gastritis: Definition, Types and Symptomatology

Gastritis is inflammation of the stomach lining. It may develop suddenly (acute gastritis) or continue over a longer period (chronic gastritis). It can also be described as erosive, when surface damage or erosions are

present, or non-erosive. Common causes include H. pylori infection, NSAIDs, alcohol-related irritation and autoimmune disease. In autoimmune gastritis, the immune system attacks cells in the stomach lining; this can interfere with the absorption of vitamin B12 and iron.

Not everyone with gastritis feels unwell. In fact, many people have no noticeable symptoms. When symptoms do occur, they are often similar to ordinary indigestion and may include:

Discomfort, aching or burning in the upper central abdomen (epigastrium).

Nausea, sometimes accompanied by vomiting.

Feeling full earlier than expected during a meal.

An uncomfortable sense of fullness after eating.

Bloating, belching or reduced appetite.

If the stomach lining becomes eroded and starts to bleed, the symptoms can be more serious. The patient may vomit fresh blood or material that looks like coffee grounds, or pass black, tarry stools (melaena). Slow blood loss may lead to tiredness, pallor, dizziness or iron-deficiency anaemia. Vomiting blood, black stools, fainting or marked weakness should never be treated as simple indigestion; urgent medical assessment is needed.

Gastric Ulcer: Symptomatology

A gastric ulcer is a sore in the lining of the stomach that extends deeper than a superficial erosion. It is commonly linked to H. pylori infection or regular use of NSAIDs, such as ibuprofen or naproxen.

The symptom most often associated with a gastric ulcer is pain or burning in the upper abdomen. Some people describe it as an aching or gnawing feeling. The discomfort may become worse after eating, so the patient may start eating less or avoiding meals. This can contribute to reduced appetite or weight loss. Other possible symptoms are nausea, bloating, early fullness and occasional vomiting.

However, the symptoms are not the same in every patient. Some people have very little pain, and in others the first sign of an ulcer is bleeding. Bleeding may appear as vomiting blood, coffee-ground vomit or black stools. Long-term small-volume bleeding can show up as tiredness or anaemia rather than obvious blood loss.

An important point in clinical practice is that a gastric ulcer must be assessed carefully because some stomach cancers can look like benign ulcers. Upper gastrointestinal endoscopy allows the doctor to inspect the ulcer and take tissue samples (biopsies) when needed.

Duodenal Ulcer: Symptomatology

A duodenal ulcer is a sore in the lining of the duodenum, usually in its first part, close to the stomach. H. pylori infection is a major cause, although NSAID use can also lead to an ulcer.

Classically, duodenal ulcer pain is felt in the epigastric region when the stomach is empty, often a few hours after a meal or during the night. Some patients notice temporary relief after eating or taking an antacid, but the pain may return later. Nausea, bloating and belching can occur as well.

These textbook patterns are helpful to remember, but they are not reliable enough to diagnose an ulcer by themselves. Some patients do not have the typical meal-related pain, and others may have no warning symptoms before a complication develops.

A duodenal ulcer can bleed, causing melaena, vomiting blood, weakness or anaemia. If it perforates, the patient may develop sudden, severe abdominal pain with guarding and rigidity. A posterior ulcer can sometimes erode into a nearby artery and cause major bleeding. These situations are emergencies and need immediate hospital care.

Gastric and Duodenal Ulcers: Key Differences

The traditional distinction between gastric and duodenal ulcers is based on the timing of pain in relation to meals. Gastric ulcer discomfort may become worse after food, whereas duodenal ulcer pain may appear later between meals or at night and may temporarily improve after eating. In reality, these patterns overlap considerably, so they should be treated as clinical clues rather than diagnostic rules.

Gastric ulcers need particular attention because a malignant lesion can sometimes resemble a benign ulcer. Endoscopy and biopsy are therefore important when a gastric ulcer is identified. Duodenal ulcers are much less commonly malignant. Both types can cause bleeding, perforation or obstruction, and both require assessment for H. pylori and medication-related causes.

Diagnostic Approach and Investigations

The assessment begins with the patient's history. The clinician asks where the pain is felt, how long it has been present, whether it is related to meals or wakes the patient at night, and whether there has been vomiting, weight loss or bleeding. Medication history is especially important: NSAIDs, aspirin, anticoagulants and previous H. pylori treatment can all affect the diagnostic plan.

On examination, there may be epigastric tenderness, pallor or signs of dehydration, but the abdomen can also feel normal. A rigid abdomen, guarding, fainting, low blood pressure or a rapid pulse raises concern for a serious complication.

The main investigations are:

1. Upper gastrointestinal endoscopy (OGD): allows direct inspection of the oesophagus, stomach and duodenum. It can identify inflammation, ulcers and bleeding, and allows biopsy. Biopsy is particularly important when assessing a gastric ulcer.

2. H. pylori testing: urea breath testing and stool antigen testing are commonly used to detect active infection. Biopsy-based tests can be performed during endoscopy. A blood antibody test may remain positive after an old infection, so it is not suitable for confirming eradication.

3. Complete blood count: helps identify anaemia or changes that may accompany bleeding.

4. Iron studies: ferritin and related tests are useful if iron-deficiency anaemia is suspected.

5. Other blood tests: renal function, electrolytes and coagulation tests may be needed, particularly in patients with vomiting, dehydration or suspected bleeding.

Endoscopy is especially important when there are alarm features, such as gastrointestinal bleeding,

iron-deficiency anaemia, persistent vomiting, progressive difficulty swallowing or unexplained weight loss. The decision and timing depend on the patient's age, risk factors and local guidelines.

General Principles of Treatment

Treatment is chosen according to the cause of the disease, the endoscopy findings, the patient's medical history and any drug allergies. The overall aim is not only to make the pain settle, but also to heal the lining, remove the cause where possible and prevent recurrence.

1. Eradication of H. pylori

When H. pylori is confirmed, the patient needs a combination of medicines rather than a single antibiotic. A commonly recommended empiric option in the 2024 American College of Gastroenterology guideline is 14-day optimized bismuth quadruple therapy. It generally combines a proton pump inhibitor, bismuth, tetracycline and metronidazole. The exact regimen must be selected by a clinician, taking local antibiotic resistance, previous antibiotic use, allergies and availability into account. Clarithromycin-based treatment should not be chosen empirically when susceptibility is unknown in settings where resistance is a concern.

It is important to finish the full course. Eradication should then be checked with a urea breath test, stool antigen test or an appropriate biopsy-based test at least four weeks after antibiotics have finished. PPIs are usually stopped for two weeks before the test when it is safe to do so, because they can affect the result.

2. Reducing gastric acid

Proton pump inhibitors (PPIs), such as omeprazole, pantoprazole, esomeprazole and lansoprazole, are commonly used because they reduce acid secretion and give the ulcer time to heal. Treatment duration depends on the site and size of the ulcer, its cause and the patient's response. Uncomplicated duodenal ulcers often heal with a shorter course than gastric ulcers. H2-receptor blockers, such as famotidine, may be used in selected situations. Antacids can give short-term relief, but they do not eradicate H. pylori or replace ulcer-healing treatment.

3. Reviewing NSAID use

If an NSAID is responsible, it should be stopped if possible. If the patient still needs anti-inflammatory treatment, the prescriber should review safer options, the lowest effective dose and whether a PPI is needed for protection. Patients taking aspirin for heart or vascular disease should not stop it on their own; the risks and benefits need to be discussed with their clinician.

4. Treating gastritis according to its cause

H. pylori gastritis is treated by eradicating the infection. If NSAIDs are causing irritation, the medicine may need to be withdrawn or changed. In autoimmune gastritis, iron and vitamin B12 levels should be assessed and deficiencies corrected. Alcohol should be avoided if it is contributing to irritation or symptoms.

5. Lifestyle and supportive care

There is no single diet that cures an ulcer. Patients can eat a balanced diet and avoid foods or drinks that they know trigger their symptoms. Stopping smoking is important because smoking can interfere with healing. Avoiding unnecessary NSAIDs and limiting alcohol when it worsens symptoms are also sensible

measures. Good adherence to the prescribed treatment is essential.

6. Follow-up

Symptoms that continue despite treatment should be reassessed. The clinician may need to check whether H. pylori was eradicated, whether the patient is still taking an ulcer-causing medicine, or whether another diagnosis is present. Some gastric ulcers require repeat endoscopy to confirm healing and review biopsy results.

Management of Complications

Complicated peptic ulcer disease can become life-threatening. Suspected bleeding, perforation or obstruction requires urgent assessment in hospital.

Gastrointestinal bleeding: may cause vomiting of blood, coffee-ground vomit, black stools, fainting, rapid pulse or low blood pressure. Initial care focuses on stabilizing the patient, establishing intravenous access, checking blood tests and arranging endoscopy. Endoscopic treatment may be needed to stop the bleeding.

Perforation: often causes sudden severe abdominal pain, guarding, rigidity and peritonitis. The patient needs emergency imaging and surgical assessment. Treatment commonly includes intravenous fluids, antibiotics and urgent intervention.

Gastric outlet obstruction: may lead to repeated vomiting, early fullness, dehydration and weight loss. Treatment may involve fluid and electrolyte replacement, decompression of the stomach and endoscopic or surgical treatment of the obstruction.

Penetration: an ulcer may extend into a neighbouring organ, such as the pancreas, and cause persistent severe pain, sometimes radiating to the back.

Prevention and Prognosis

Most uncomplicated ulcers heal when the underlying cause is treated and the patient completes the prescribed course of medicine. Eradicating H. pylori greatly reduces the chance of an H. pylori-related ulcer returning. Prevention also means avoiding unnecessary NSAIDs, using stomach protection when it is needed, stopping smoking and attending follow-up appointments. Anyone with a previous ulcer or gastrointestinal bleed should tell their healthcare professional before starting NSAIDs, aspirin or anticoagulants.

Conclusion

Gastritis and peptic ulcer disease are common conditions, but they are not exactly the same. Gastritis affects the stomach lining, while a peptic ulcer is a deeper sore in the stomach or duodenum. H. pylori infection and NSAID use are the main causes that clinicians look for. Symptoms such as upper abdominal pain, nausea and bloating can suggest an upper gastrointestinal problem, but they do not identify the exact condition on their own. A careful history, appropriate H. pylori testing and endoscopy when indicated help establish the diagnosis. Successful treatment depends on addressing the cause, reducing acid when needed, completing the prescribed medicines and recognizing complications early.

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