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Peptic ulcer: Mini review with respect to case

Abstract

Peptic ulcer is erosion in lining of digestive tract, typically occurs in lower esophagus, stomach and proximal duodenum. Major forms are gastric ulcer and duodenal ulcer, caused by digestive action of stomach acid and pepsin. Causative agents mainly are infection caused by *Helicobacter pylori (H. pylori)* or an excessive use of non-steroidal anti-inflammatory agents (NSAIDs). Symptoms include epigastric pain that often cause awakening of patient at night, heartburn, loss of an appetite, weight loss and may lead to complications like gastric obstruction, perforations and bleeding. Elder patients with alarming symptoms should be referred for endoscopy, while younger patients with no alarm symptoms referred for *H. pylori* treatment. Discontinue NSAIDs use and if *H. pylori* present, treat infections with drugs. Surgery is also done in case of complications.

Keywords: Gastric ulcers, Duodenal ulcers, *Helicobacter pylori*

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Introduction

Peptic ulcer disease is an erosion or lesion in the lining of digestive tract. It interferes with the integrity of gastrointestinal mucosal layer within esophagus, stomach and proximal part of small intestine, called duodenum.[1] Peptic ulcer disease is becoming a common health problem and widely prevailing throughout the world.[2] Peptic ulcer disease affects about 4 million people annually in the whole world. About 10 to 20% of patients lead towards complications.[3] Prevalence of *H. pylori* is more common in childhood and middle aged population. It is considered to be transmitted by oral ingestion of the bacterium.[4] NSAIDs induced ulcers are more common in elderly patients as they use analgesics more frequently.[5] The mechanisms by which NSAIDs may lead to and cause gastrointestinal complications are poorly understood.[6] During early 20th century, it was believed that ulcers were caused due to smoking and stress. Later in 1994, it was concluded that there is strong link between ulcer and *H. pylori.* Apart from *H. pylori*, widespread use of NSAIDs is the major cause of gastrointestinal injury. Other factors responsible for disease includes eating too much spicy and fatty food, stress, drinking alcohol and coffee.[2] Symptoms of peptic ulcer include epigastric pain, heartburn, nocturnal pain, nausea, postprandial pain, weight loss due to decreased appetite. If symptoms remain untreated, it may lead to complications like gastrointestinal bleeding, perforations, penetration, narrowing and obstruction.[2] When *H. pylori* and use of NSAIDs is present together, it increases the risk of bleeding.[7] Prevalence of peptic ulcer has reduced from past few years mainly due to an effective treatment of *H. pylori* infection eradication, however widespread use of NSAIDs and aspirin (acetylsalicylic acid) causes certain gastrointestinal complications.[7] NSAIDs and aspirin may lead towards gastrointestinal mucosal injury, and hence the complications.[8] Various drug regimens available include proton pump inhibitors (PPIs), H2 receptor antagonist, antacids, antibiotics and mucosal protective agents. The diagnostic tests include blood tests, urea breadth test, stool antigen test and endoscopy.[9]

Case presentation

A 23 years old male visited clinic with complains of an upper abdominal pain, heartburn, nausea and sometimes vomiting. He was in usual state of health 5 days back when he started having epigastric pain. Pain aggravated at night after taking large meal. He was fond of fried and spicy food. He had a family history of peptic ulcer disease. He denied cigarette smoking.

Past medication history

He was using Synflex (naproxen) to relieve pain from past 2 days, but no significant effect. Then he decided to consult doctor.

Past medical history: Past medical history reveals the absence of any disease in the patient.

Family history: Patient's father had a history of peptic ulcer disease.

General examination

Weight: 58kg

Height: 5feet 8inches

BMI: 19.44kg/m^2

Temperature: 98°F

BP: 120/70mmHg

Diagnosis of peptic ulcer

According to the provided information, patient's laboratory tests were done. There were no signs of bleeding as Hb values were normal (13.5g/dl) and absence of blood in stools and vomiting. Serological and Urea breadth test confirmed *H. pylori* positive infection in the patient.

Medication therapy

Pharmacist Interventions

Pharmacist made three types of interventions after reviewing the patient history and physician prescription. These include drug related interventions, dietary modifications and lifestyle modifications (Table 1).

Drug related interventions

a. Take Omeprazole before meal.

b. There is no need of ranitidine (H2 receptor antagonist) at this stage of patient. Triple drug therapy is followed in the patient. As, PPIs and Mucaine syrup is already added in medication to relieve burning sensation so, Glamet is skipped from therapy.

Table 1 Medication therapy

Brand	Generic	Strength	Frequency
Amoxil	Amoxicillin	1g	BID
Clarithro	Clarithromycin	250mg	BID
Risek	Omeprazole	40mg	OD
Glamet	Ranitidine	150mg	BID
Mucaine suspension	Aluminium hydroxide, magnesium hydroxide, oxethazaine	120ml	1 tablespoon TID

Dietary modifications

a. Omega-3 polyunsaturated fatty acids should be added as they have an anti inflammatory effect and protect stomach from ulcers.

b. Avoid spicy food.

c. Avoid late night meals.

d. Take healthy balanced diet having low cholesterol.

e. Take plenty of water and fresh juices.

Lifestyle modifications

a. Avoid lying down in bed immediately after meal.

b. Elevate head of bed.

c. Avoid stress

Outcomes

Patient used the medicine regularly, routine tests and monitoring was done and patient was improved on follow-up. He was advised to visit in case of any complication.

Discussion

The patient suffered from peptic ulcer disease due to many reasons that include improper diet, spicy foods, late night meals, family history of ulcer disease and stress that worsen ulcer symptoms. Patient was at that level where an *H. pylori* infection needs to be cured. According to research, if symptoms of peptic ulcer are not treated, this may lead to complications like bleeding, perforations, narrowing and obstruction.[4] Peptic ulcer patient can manage his symptoms by adhering to medications. Combination of antibiotic therapy and PPIs are given in an appropriate manner. Antibiotic resistance in some countries leads towards triple antibiotic therapy for better results.[10] Lifestyle modifications along with adherence to medications are important. Spicy and late night meals should be avoided. Due to poor dietary habits and sedentary lifestyle patient faces difficulty in changing his routine. The patient is fond of spicy and fried food. Proper counselling improves the patient's disease education and motivates to follow the instructions.

Conclusion

Peptic ulcer is manageable disease, if not treated may lead towards complications. *H. pylori* induced ulcers are usually more common in people with 20 to 30 years age, mainly due to their sedentary lifestyles. NSAIDs induced ulcers are more common in elderly patients, as they use analgesics more frequently and may lead towards complications.

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None.

Conflict of interest

The authors declare that there is no conflict of interest.

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