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Medical Guidelines

H. Pylori Medical Guidelines

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Helicobacter pylori (H. pylori) is a Gram negative bacteria that has high predilection for gastric antrum. This organism has a strong association with various of Gastrointestinal (GI) diseases including gastric and duodenal ulcers, gastric adenocarcinoma, mucosa associated lymphoma tissue lymphoma (MALT lymphoma) and chronic active gastritis.[1] The global prevalence of 44.3% is reported in a meta-analysis[2] while a local Pakistani study reported a seroprevalence of 92%.[3] The disease prevalence is high in economically less developed areas like subcontinent, other regions of southeast Asia and African continent.

There are many challenges for clinicians working in high prevalence areas, like Pakistan, not because of the shear burden of disease. Since the disease has a fecal oral transmission and as yet no effective vaccine is available, the preventive strategies, which revolve around control of transmission, in most of the circumstances are not up to the mark. The problem is compounded by unavailability of cheap and cost effective single test to plan diagnostic and treatment decisions. The increasing prevalence of high antimicrobial resistance results in more treatment failures.[4] The possibility of increasing rates of reinfection in long term further makes treatment decision difficult.[5] The annual reinfection rate of 13%, based on a total follow-up of 84.7 patient years was reported in a study conducted in Bangla Desh.[6] Simplified diagnostic and treatment algorithms incorporating clinical data and laboratory information may be helpful for clinicians working under these circumstances.

There are many tests available for the diagnosis of H. Pylori infection

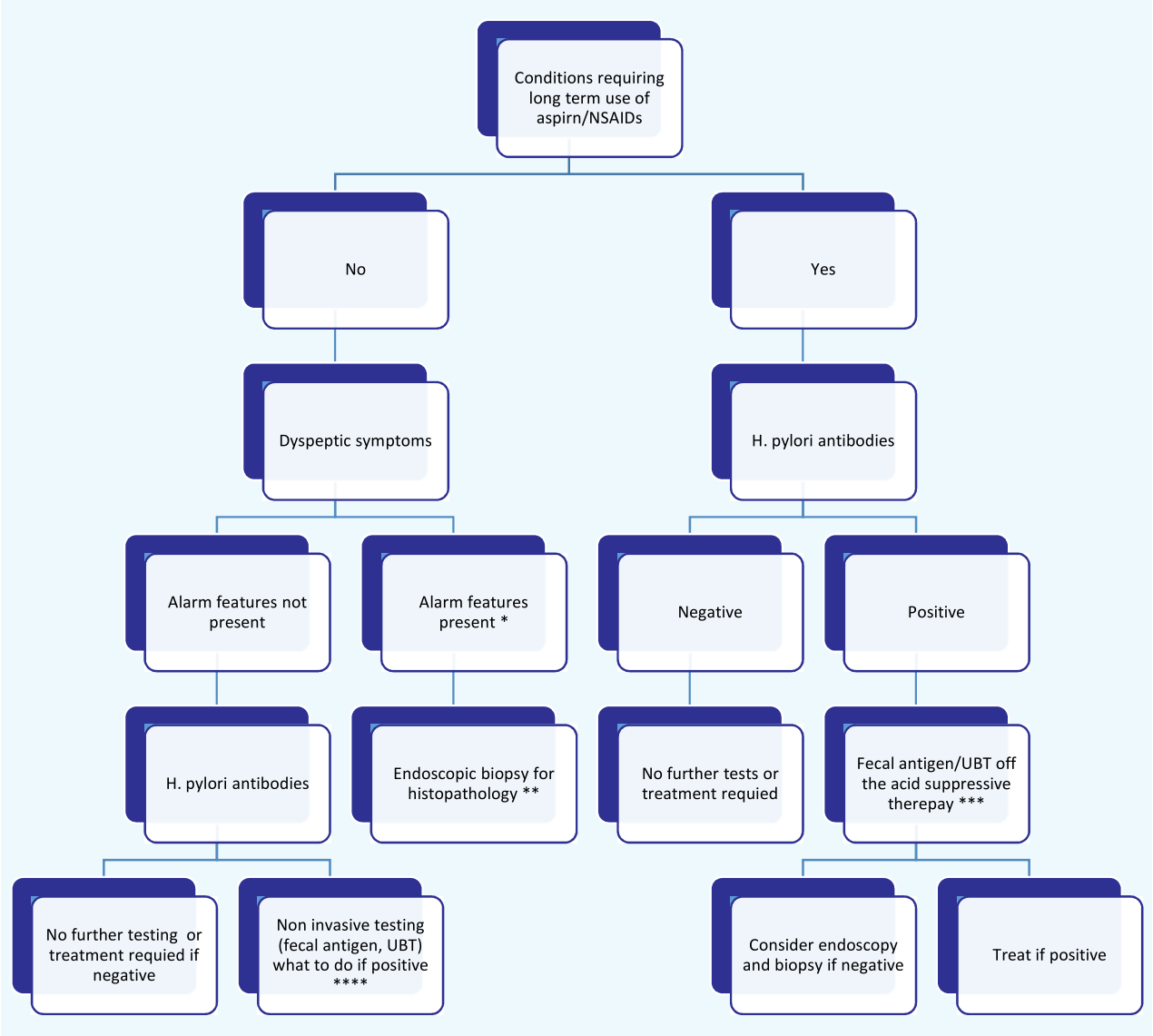
The serological tests give no information about past or an ongoing infection. The sensitivity and specificity of serological tests also depends on the general prevalence of disease in the population. But still they can be used as screening tools in a selected group of patients. The urea breath test (UBT) and fecal antigen testing

Table 1:

Diagnostic test	Advantages	Disadvantages
H. Pylori antibodies (IgG)	Widely available Inexpensive High sensitivity in high prevalence areas	Cannot differentiate past from ongoing infection
Urea breath test	Simple and non-invasive Cost effective	Not widely available Not recommended in pregnancy False positive tests in other urease producing bacterial infections False negative tests in acid suppressive and antibiotic treatment, atrophic gastritis and rapid gastric empting conditions (surgery on pylorus or Antrectomy)
H. Pylori fecal antigen	Simple and non-invasive Can be used in children and pregnant women	Recent antibiotic and acid suppression therapy can decrease the accuracy Stool sample collection is cumbersome
Endoscopy	Rapid urease test gives results in 30 minutes Sample can be sent for histopathology	Invasive Sedation required Round time for histopathology may be a few days

for H. Pylori, although non-invasive, have their own problem of sensitivity and specificity. The histopathology and culturing, although gold standard, are expensive and not available on a wider scale. An algorithm (figure No-1) based on clinical and lab data may be useful in clinical practice.

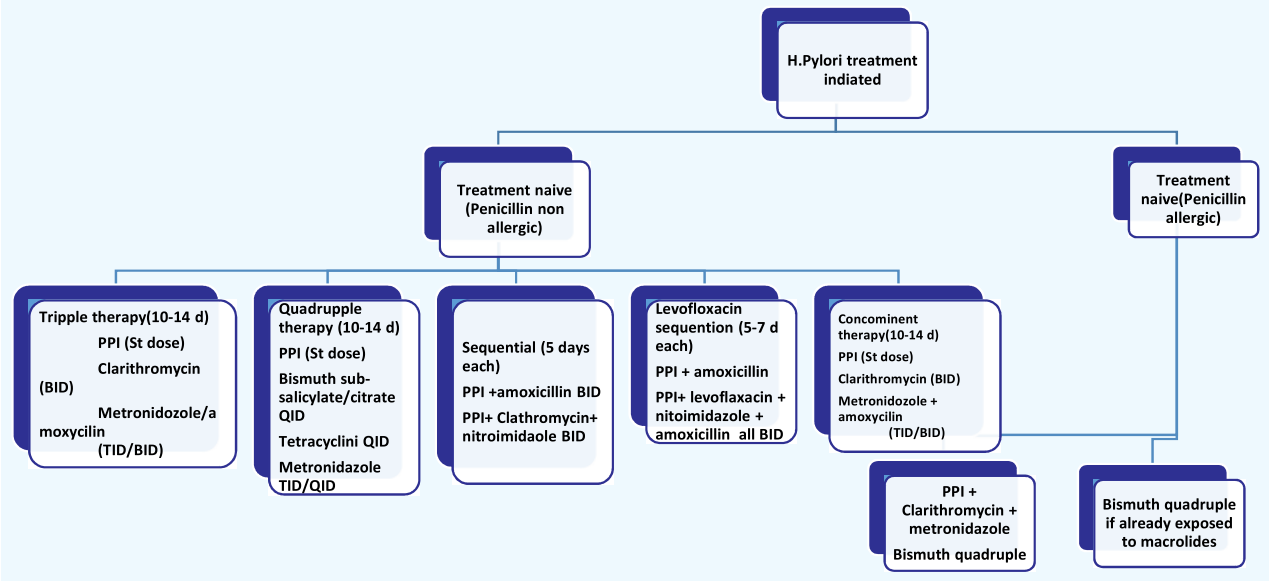
Different antibiotic regimens have been used with varying degree of success including the triple (eradication rates for 14 and 10 days' treatment are 90.7%-92.5% and 87% respectively for sequential therapy[7,8], quadruple regimes (eradication rates for 14 and 10 days' treatment are 97.1%[9] and 90.4%[9] respectively) and levofloxacin (eradication rates for 7 and 10 days' treatment are 80.9%[10] and 83.1%[11] respectively) containing regimens. Patients



- * Persistent vomiting, upper GI bleed, unexplained weight loss and/or iron deficiency anemia, late onset dyspeptic symptoms, gastric cancer (prior history of resection or family history), abnormal examination, idiopathic thrombocytopenic purpura
- ** Patients undergoing upper endoscopy for any other reason may also be tested for H. Pylori (e.g., GERD)
- *** Patient should be off the acid suppressive therapy for at least two weeks, surface acting drugs may be used if required
- **** American college of gastroenterology recommends treatment if the organism is detected. But treatment in high prevalence area along with possibility of reinfection and treatment failures, this may not be a cost effective strategy in patients who do not have alarm features

who are treatment naïve they can be offered one of the following combinations shown in Figure No-2

Figure No 2 Orally administered PPIs (standard dose: Lansoprazole 30 mg daily, omeprazole 20 mg daily, pantoprazole 40 mg daily, rabeprazole 20 mg daily, or esomeprazole 20 mg daily), Clarithromycin 500 mg, Metronidazole 250 QID or 500 mg TID, amoxicillin 1g, Levofloxacin 250mg Bid or 500 mg OD, Bismuth sub salicylate 300mg, Bismuth sub citrate 120-300 mg, tetracycline 500mg)



Second-line therapy[12] should include at least one antibiotic already not used. Quadruple therapies have shown better success than triple (83% vs 76%) and 14-day quadruple regimens fare better than 7-day quadruple regimens (91% vs 81%). [13]

In patients with persistent infection, depending on the treatment already used they can be given following alternatives (Figure No-3 and 4)

Figure No 3

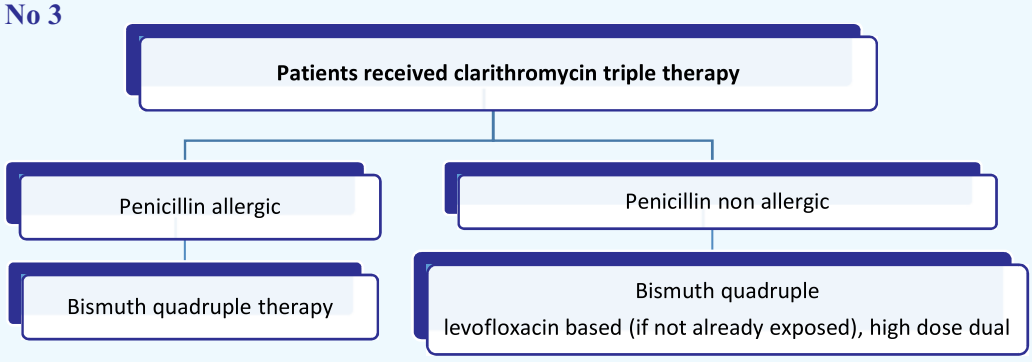
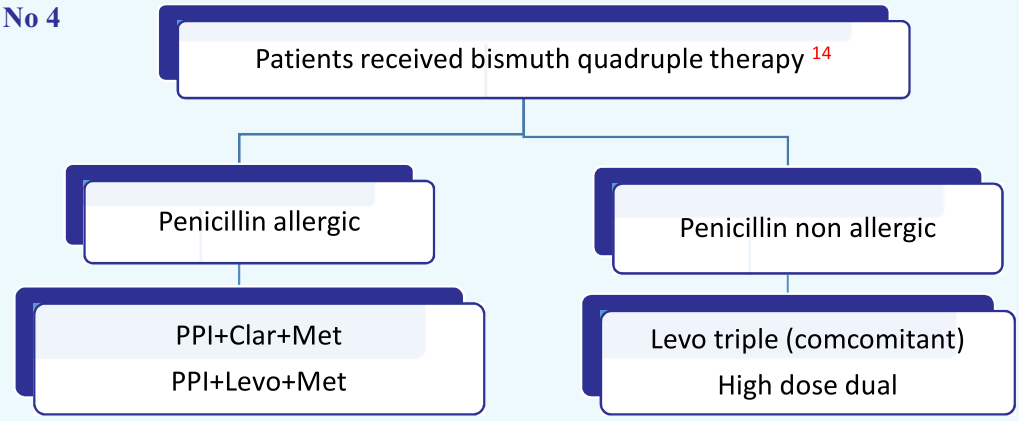


Figure No 4



To ensure post treatment eradication UBT or stool antigen testing may be used 4-12 weeks post treatment. Serological test remains positive even after elimination of infection. Re-infections after successful eradication may be treated as new infection.

Potassium competitive acid blockers are recent addition and can be as effective as PPI[15] and are approved for treatment of H. Pylori infection in Japan and USA. The role of probiotics and statins still needs to be validated.

H. pylori is a problem mainly in countries with poor hygiene and sanitation. The preventive programs including improvement in sanitary conditions and development of vaccine are the important steps in controlling the acquisition of new infection and re-infection. Newer agents like P-CABs used instead of PPI look promising. Rational use of antimicrobials can reduce resistance and will be cost effective in long term.

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