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## Case Report

# Raised liver enzyme in a patient receiving *Helicobacter pylori* triple regimen: A case report

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## ABSTRACT

*Helicobacter pylori* infection remains a worldwide spread disease with a definite morbidity and mortality. Indeed, this infection is the main cause of non-ulcer dyspepsia, peptic ulcers and gastric tumors, including both low-grade MALT-lymphoma and adenocarcinoma. A 65-year-old female patient visited outpatient department of Gastroenterology clinic for a routine follow-up after completion of 14-day triple drug therapy for *H. pylori*. After a few days of empirical treatment for raised liver enzymes, her liver enzymes normalized. Clinicians should be aware about the rare adverse event during *H. pylori* eradication treatment.

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## 1. Introduction

*Helicobacter pylori* infection remains a worldwide spread disease with a definite morbidity and mortality.<sup>1</sup> Indeed, this infection is the main cause of non-ulcer dyspepsia, peptic ulcers and gastric tumors, including both low-grade MALT-lymphoma and adenocarcinoma.<sup>2–4</sup>

The current standard triple therapies include a proton pump inhibitor (PPI), clarithromycin (500 mg) plus amoxicillin (1 g) or metronidazole/tinidazole (500 mg); all given twice daily for 7–14 days, as suggested in the international guidelines.<sup>5,6</sup> Fourteen day regimen is recommended where bacterial resistance rate is higher in population.

## 2. Case Report

A 65-year-old female patient visited outpatient department of Gastroenterology clinic for a routine follow-up after

completion of 14 day triple drug therapy for *H. pylori*. Liver function test at the time of follow-up revealed raised liver enzymes.

She earlier had complaints of burning sensation epigastrium, nausea, and upper abdominal pain for 3-4 months; for which she underwent upper gastrointestinal endoscopic examination and biopsy was taken. She was confirmed with *H. pylori* infection by histopathological examination.

She was receiving tablet pantoprazole 40 mg twice daily oral, cap. amoxicillin 1000 mg twice daily per oral, and tab. clarithromycin 500 mg twice daily for the last 14 days for treatment of *H. pylori* infection.

Her baseline AST, ALT and alkaline phosphatase (ALP) were 56 IU/ml, 32 IU/ml, and 56 IU/ml respectively. After 14 days, her AST, ALT and ALP raised to 71.9 IU/ml, 133 IU/ml, and 86 IU/ml respectively (ALT >4 times after 14 days).

After a few days of empirical treatment for raised liver enzymes, her liver enzymes normalized.

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### 3. Discussion

Although, it has been reported that adverse effects due to the *H. pylori* triple regimen are mild and does not lead to discontinuation of therapy.<sup>7</sup> Recently, Hafeez et al reported that 76.2% of their patients experienced adverse events due to proton pump inhibitor, amoxicillin, and clarithromycin therapy.<sup>8</sup> The most common included alteration in taste followed by abdominal pain/diarrhea, and diarrhea.

Regarding our patient's drug history; it was found that liver enzymes were found to be raised after completion of *H. pylori* treatment. Since pantoprazole was not very likely the culprit, clarithromycin and amoxicillin were the drugs in suspicion. It has been known for many years that several antibiotics can cause severe hepatic injury.

In the case of the penicillins, the combination amoxicillin-clavulanate and the penicillinase-resistant penicillins oxacillin, (di-)cloxacillin, and flucloxacillin can cause (mainly cholestatic) hepatitis. There are case reports indicating liver failure may be caused by amoxicillin alone.<sup>9</sup>

Regarding clarithromycin, fulminant liver failure has been described in the literature.<sup>10</sup> As we know that clarithromycin is primarily metabolized in the liver, the patient information leaflet warns about administration of this drug in patients with advanced liver dysfunction. In patients with mild liver dysfunction, frequent monitoring of AST, ALT, GGT, alkaline phosphatase, and bilirubin is recommended. Since clarithromycin inhibits liver enzyme CYP3A4, clinicians have to be aware that plasma levels of drugs that are metabolized by this enzyme may increase. However, in our case, we could not study any drug interactions.

Weidmann et al reported that a case report about raised liver enzymes of *H. pylori* eradication in a patient with moderate chronic and moderate active pancreatitis.<sup>11</sup> The liver dysfunction was self-limited and normalized with no treatment.

According to Naranjo adverse drug reaction probability assessment scale, clarithromycin was the probable drug responsible for causing hepatitis. Not many cases of amoxicillin induced hepatitis have been reported in literature

### 4. Conclusion

In summary, clinicians should be aware about the rare adverse event during *H. pylori* eradication treatment. Although only mild liver injury was detected in our patient, physicians should be prepared for rapid management of acute liver failure

### 5. Conflict of Interest

The authors declare no relevant conflicts of interest.

### 6. Source of Funding

None.

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