

## Lansoprazole as part of triple therapy in eradication of *H. pylori* in Sudanese patients with gastro-duodenal inflammation

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### Abstract

**Background:** Eradication of *H. pylori* is important goal in the management of uncomplicated peptic ulcer disease and other conditions associated with *H. pylori*. The survival capabilities of *H. pylori* in the stomach makes it difficult to eradicate and effective treatment requires multidrug regimens.

**Objectives:** To study the efficacy of lansoprazole, Amoxicillin and metronidazole in the eradication of *H. pylori*.

**Methods:** A total of 35 patients (22 males and 13 females) with gastro-duodenal inflammation and positive for *H. pylori* were studied. Gastro-duodenoscopy was repeated four weeks after completion of treatment to assess the healing of inflammation. Biopsies were taken from the stomach and tested for *H. pylori* before and after treatment.

**Results:** Twenty eight patients (93%) reported improvement in symptoms.

Eradication of *H. pylori* was confirmed with negative rapid urease test in 20(67%) patients. Complete healing of the gastro-duodenal inflammation was achieved in 22 patients (73%), partial healing in 6 patients, while only 2(7%) patients showed no healing.

**Conclusion:** The reduced eradication rate of this drug combination in this study (67%) compared to a previous one (96%) could be explained partly by the development of antibiotic resistance (possibly to metronidazole) during the last few years.



Key wards: ulcer, urease, endoscopy, metronidazole.

In developing countries, the prevalence of *H. pylori* may reach levels of 80 – 90% by 20 years of age<sup>1</sup>. *H. pylori* are associated with the majority of duodenal and gastric ulcers<sup>2, 3</sup>. It has been classified by the WHO as type 1 carcinogen of the stomach since 1994<sup>4,5, 6</sup>. A significant proportion of patients do not respond to treatment. Antibiotic resistance is the major cause of treatment failure. Other causes of treatment failure are advanced age, smoking, high intra-gastric bacterial load before treatment, bacterial genotype and host genetic polymorphisms.

### Materials and methods:

This study was carried out in the period from April 2002 to October 2002. Thirty five patients with gastro-duodenal inflammation, and positive for *H. pylori*, were included in this study. Gastric antral biopsies were taken and rapid urease test was used to test for the organism.

All the patients were interviewed via a questionnaire.

They were supplied with amoxicillin 1gm twice daily for one week, metronidazole 1gm twice daily for one week and lansoprazole 30mg once daily for three weeks. The patients were followed up two weeks after commencement of treatment for improvement in symptoms, compliance and for reporting of side effects.

Thirty patients came back for follow up. The patients were re-endoscoped four weeks after completion of treatment. Healing of gastro-duodenal inflammation was assessed and two biopsies were taken, one from the antrum and the other from the body of the stomach. The biopsies were re-tested for *H. pylori* using rapid urease test.

If both biopsies were negative, then treatment will be considered as successful.

The data were entered into the computer and descriptive analysis was done by percentage. P values were calculated using the Chi-square test.

### Results:

All 30 patients who continued their follow up received the full dose of triple therapy.

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Twenty three (76.7%) patients, reported side effects to metronidazole (nausea and/or metallic taste). Two patients reported side effects to amoxicillin (diarrhoea). Only one patient suffered from headache attributed to lansoprazole.

Table 1: Pattern of gastro-duodenal inflammation

Type of gastroduodenal inflammation	No. of patients	%
Gastritis	11	31
Duodenitis	10	29
Gastritis + Duodenitis	3	9
Duodenal ulcer	11	31
Total	35	35

Twenty (57%) patients were of low socioeconomic status, 14(40%) patients were of moderate socioeconomic status and only one (3%) patient was of high socioeconomic status. Twenty eight (93%) patients reported improvement of symptoms within the first two weeks after commencement of treatment. Eight patients with duodenal ulcers showed complete ulcer healing. Rapid urease test was negative in 20(67%) patients and positive in 10(33%) of patients.

Table 2: The distribution of H. pylori in the stomach, in patients positive for H. pylori, 4 weeks after completion of treatment.

The distribution of H. pylori in the stomach	No. of patients	%
Antrum only	5	50
Body only	0	0
Antrum + Body	5	50
Total	10	100

#### Discussion:

The infection was more prevalent among the groups of low socioeconomic status, which is consistent with other studies<sup>7</sup>. Comparison studies between developing and developed countries showed that the prevalence among middle aged adults is over 80% in many developing countries as compared to 20 - 50% in developed countries<sup>8,9</sup>.

A number of patients reported improvement in symptoms after completion of the therapy

which is consistent with studies that showed significant symptomatic improvement to occur in patients who became H. Pylori negative in the absence of peptic ulceration<sup>10</sup>. The combination of amoxicillin, metronidazole and lansoprazole had achieved an eradication rate of 67% in our study. In many other studies, amoxicillin and metronidazole had achieved eradication rates of 78.9 - 82.8% according to intention-to-treat analysis<sup>11</sup>.

A study was done in Sudan<sup>12</sup> on the effect of triple therapy (amoxicillin, metronidazole and omeprazole) on the eradication of H. pylori infection in Sudanese patients had achieved an eradication rate of 96%. This discrepancy in the eradication rate of H. pylori may be explained partly by the development of resistance to metronidazole which is frequently used by the patients without prescriptions. However, a difference in efficacy in eradication of H. pylori between omeprazole and lansoprazole has to be considered among other factors. Metronidazole resistance ranges between 20% and 30% among both men and women in developing countries, because of its frequent use to treat other diseases<sup>13</sup>.

Most of the patients (77%) complained of nausea and/or metallic taste associated with metronidazole, 7% complained of diarrhoea due to amoxicillin and only 3% of patients complained of headache related to lansoprazole usage. These side effects are usually not severe and have not led to poor compliance in trials<sup>14,15</sup>.

Local surveillance of antibiotic resistance to H. pylori is recommended to prevent primary failure of treatment.

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