Comparison of Tablet and Liquid Antacid in the Treatment of Duodenal Ulcer

NIRMAL KUMAR, J.C. VIJ, B. S. ANAND

Department of Gastroenterology, G.B. Pant Hospital, New Delhi 110 002

Abstract

The study was carried out to examine the comparative efficacy of liquid and tablet preparations of antacid in the treatment of duodenal ulcer. Fifty-five patients with endoscopically proven duodenal ulcer were randomly allocated to the tablet or liquid form of the same antacid (Aludrox MH, Wyeth). Group 1 (29 patients) received 4 antacid tablets 1 h and 3 h after each meal (total daily neutralising capacity 204 mmol of HCl per tablet) while Group II (26 patients) received 15 ml of liquid antacid in a similar fashion (total daily neutralising capacity 207 mmol of HCl). Seven (24%) patients in the tablet group and 2 (8%) in the liquid group dropped out of the study. Complete relief from pain at the end of the first, second, third and fourth weeks of treatment was obtained in 38% vs 58%, 52% vs 75%, 64% vs 83% and 80% vs 86% for the tablet and liquid groups respectively (P > 0.05).

Endoscopic examination after 4 weeks of treatment showed an ulcer healing rate of 68% in the tablet group compared with 79% in the liquid group (P > 0.05).

It is concluded that, in the doses used, liquid antacid may be marginally superior to the tablet form in terms of patient compliance and initial pain relief but the difference in ulcer healing is not significant.

Key Words: Liquid vs tablet antacids, duodenal ulcer.

Introduction

It is now well established that healing of duodenal ulcer by antacids is comparable to that obtained with cimetidine.1-2 Liquid antacids are generally considered superior to tablets, perhaps because of their more effective in vitro neutralising capacity.3-4 In contrast, recent clinical trials have found antacid tablets to be as effective as cimetidine or liquid antacid in the healing of duodenal ulcer.5-6 There are, however, no studies assessing the comparative efficacy of the liquid and tablet preparations of the same antacid, and to examine this the present study was carried out in the form of a randomised therapeutic trial.

Material and Methods

Fifty-five consecutive patients with endoscopically proven duodenal ulcer were included in the study. None of the patients was on specific anti-ulcer treatment in the recent past and none had any ulcer related complications. Patients were divided into two groups and were randomly allocated to the tablet or liquid form of the same antacid (Aludrox MH, Wyeth). Group I (29 patients) received antacid tablets containing aluminium hydroxide 300 mg and magnesium hydroxide 83 mg per tablet (neutralising capacity 8.5 mmol of HCl per tablet) in a dose of 4 tablets 1 h and 3 h after each meal (total daily neutralising capacity 204 mmol of HCl). Group II (26 patients) received liquid antacid containing aluminium hydroxide 61 mg and magnesium hydroxide 20 mg per ml (neutralising capacity 2.3 mmol of HCl/ml) in a dose of 15 ml 1 h and 3 h after each meal (total daily neutralising capacity 207 mmol of HCl).

Treatment was continued for 4 weeks. Each patient was given a weekly supply of the antacid and patients in group I were instructed to properly chew and swallow the tablets. Clinical assessment was made every week and symptoms were recorded in a proforma. Patients were considered to be symptomatic if they complained of any discomfort or pain during the previous week. The patients were endoscoped again after 4 weeks and the findings were categorised as (a) healing of the duodenal ulcer with or without residual duodenitis, and (b) non-healing of ulcer (irrespective of the size). Chi square test was used for statistical analysis.

Results

Patients in the two groups were comparable with regard to the mean age (37 ± 11 and 29 ± 9 years) and sex ratio (M : F 20 : 2 and 21 : 3). The duration of symptoms before entry into the trial (4.4 ± 4.6 and 4.2 ± 3.5 years) and the proportion of cigarette smokers (76% and 79%) showed no significant difference. Seven (24%) patients in the tablet group and 2 (8%) in the liquid antacid group dropped out of the study. In most patients the lack of compliance was because of the difficulty in consuming 24 tablets a day. No drug-related side effects like diarrhoea or constipation were observed in either study group.

Symptomatic response: The results are shown in the Fig. The differences were not statistically significant.

Ulcer healing: Endoscopy after four weeks of treatment showed complete ulcer healing in 15 (68%) patients on tablets compared to 19 (79%) on liquid antacid (Fig). These differences were not statistically significant.

Discussion

The tablet and liquid forms of antacids were administered in doses with almost identical acid neutralising capacity. The present doses were used because in a
previous study we had found that the optimum antacid requirement for both pain relief and healing of duodenal ulcer was 90 ml (acid neutralising capacity—207 mmol HCl) per day. Nineteen of 24 (79%) patients showed ulcer healing at 4 weeks with the liquid preparation, a figure which is very similar to our previous observation. With tablets, the healing rate was less (68%) but the difference was statistically not significant. Similarly, with regard to pain relief, liquid antacid gave marginally better results compared to tablets in the first, second and third weeks of study, although the differences were statistically not significant. At four weeks the results of pain relief in the two groups were similar.

These findings contrast with others' observations that antacid tablets are less effective in acid neutralisation compared with the liquid preparation of equal potency. The marginal difference we noted is perhaps related to the fact that tablets, despite chewing, fail to disintegrate adequately and thus the quantity of antacid which comes into contact with the gastric acid is proportionately less.

Although it is generally assumed that patients prefer antacid tablets to the liquid preparation, our results were different. More patients in the tablet group dropped out of the study; in fact most patients, even those who completed the study, found it difficult to consume 24 tablets a day. It is concluded that in the doses used liquid antacids may be marginally superior to the tablet form in terms of patient compliance and initial pain relief, but the difference in ulcer healing was not significant.

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