Twenty-five patients with bleeding peptic ulcers were randomized to receive either ranitidine 50 mg 8 hourly i.v. (control group) or a continuous nasogastric antacid infusion at the rate of 0.5 ml/min along with an i.v. injection of cimetidine 100 mg/h (treatment group). Twelve patients were included in the control group and 13 in the treatment group. The mean gastric pH on therapy was significantly higher in the treatment group (7.88 +/- 0.37) than in the control group (5.00 +/- 0.55) (p less than 0.001), and the gastric pH was noted to be greater than 7 on 95% of the occasions in the treatment group and on 8.6% of the occasions in the control group. An overall control of bleeding was achieved in 92.3% of the patients in the treatment group and 50% of the patients in the control group (p less than .05). Thus, the failure of therapy was significantly more common in the control group than in the treatment group (p less than 0.05), and more patients of the control group had to undergo emergency surgery than that in the treatment group. None of the patients in the treatment group, but 16.6% of the patients in the control group, died during the study period in the hospital stay. We conclude that in patients with bleeding peptic ulcer an intensive medical therapy comprising hourly injections of cimetidine (or presumably of other H2 blockers) and continuous nasogastric antacid infusion can achieve sustained achlorhydria, better control of bleeding, and reduce the need for emergency surgery.