
Abstract
The extent to which oral glutamic acid hydrochloride decreases mean gastric pH in fasting persons with and without simulated hypochlorhydria was studied. Healthy nonsmoking men were randomly assigned to one of two drug regimens followed by the other regimen after a one-week washout period. In regimen 1 the fasting subjects received two 680-mg doses of glutamic acid hydrochloride given 10 minutes apart. Regimen 2 was the same, except that an oral dose of ranitidine 300 mg (as the hydrochloride salt) was administered one to two hours before the first dose of glutamic acid hydrochloride to simulate hypochlorhydria. Gastric pH was monitored radiotelemetrically before and after glutamic acid hydrochloride administration by using the Heidelberg capsule technique. Six men 20 to 28 years of age participated in the study. For regimen 1, the gastric pH before glutamic acid hydrochloride was given was not significantly different from that after administration (grand medians, 1.4 and 1.3, respectively). In regimen 2, the median gastric pH increased to greater than 4.0 within two hours after ranitidine treatment. Median gastric pH after the second dose of glutamic acid hydrochloride was significantly lower than before the first dose (grand medians, 1.6 and 6.2, respectively). The time to minimum pH was 2 to 15 minutes, and pH remained less than 3.0 for a mean of 45 minutes. Glutamic acid hydrochloride alone did not decrease fasting gastric pH, but it significantly reduced pH in subjects with simulated hypochlorhydria produced by orally administered ranitidine.