

### Radioimmunoassay of Gastrin

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By use of a radioimmunoassay technic developed by CIS laboratory, we measured fasting and post prandial serum gastrin concentrations of patients with gastrointestinal diseases and of healthy controls.

The measured values of fasting serum gastrin levels were as follows: 15 control subjects  $38 \pm 21$  with a range of 10 to 85 pg per ml, 3 patients with duodenal ulcer 50, 5 with gastric ulcer 98 with a range of 55 to 188, 5 with post partial gastrectomy 81 with a range of 35 to 170, 2 with pernicious anemia following total and partial gastrectomy 26 and 86, 1 with dermatomyositis 350, 3 with achlorhydria 290, 103, 13.

Patients with renal insufficiency and liver cirrhosis had normal fasting levels.

Then the effects of food, glycine, caffeine and glucose on gastrin secretion were observed. Food produced in all 16 subjects a rise in serum gastrin up to 120%–330% of the fasting level 40 minutes

after ingestion. The rise of gastrin level above basal values was much greater in the patient with ulcer than normal control. Food was better stimulant than 0.25M glycine 250 ml, 50g glucose.

Caffeine produced in the patient with duodenal ulcer a fall in serum gastrin down to 220% of the fasting level an hour after ingestion, in proportion to gastric acidity.

Detailed every-hour measurement of gastrin for 24 hours suggested that 1) food produces a rise in serum gastrin 30–60 minutes after ingestion 2) in 3–4 hours after diet it returns to fasting level 3) at night serum gastrin variation is very slight 4) at 4 a.m. it is lowest.

Patients with multiple ulcer, whiplash injury and causalgia had very high variations in the every-hour measurement, while those with Kimmelstiel-Wilson syndrome, duodenal ulcer and acute pancreatitis showed comparatively high variations.

### Influence of Vagotomy on Serum Gastrin

(Comparative relationship between serum gastrin concentration and gastric acidity)

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The determination of serum gastrin is more accurate than gastric juice collection for judgment of completeness of vagotomy. Serum gastrin using C.I.S. kit were measured with radioimmunoassay to 86 patients with peptic ulcers. Serial

serum gastrin, gastric acidity were analyzed in pre- and post-gastrectomy and vagotomy patients (totaltruncal and selective gastric vagotomy).

Serum gastrin level of postvagotomy patients