

## C1

### Laboratory Diagnosis of Gastrinoma Remains Difficult

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**Background:** Clinical diagnosis of gastrinoma remains problematic in a significant number of patients due to other common conditions associated with hypergastrinaemia. Those with excessive circulating gastrin include gastrinoma and those where the negative feedback of gastric acid is absent, specifically patients with atrophic gastritis and those on proton pump inhibitory (ppi) therapy. In addition patients visiting outpatient clinics are not fasted.

**Methods:** We have collated data from routine measurement of gastrin in subjects with gastrinoma, auto-immune atrophic gastritis (AIAG), patients ppi therapy, H-pylori (Hp) +ve duodenal ulcer (DU), Hp+ healthy controls, Hp- healthy controls after an overnight fast or post-prandially. Gastrin was assayed in plasma using an antibody (R98) directed towards the C-terminal of gastrin 17 that detects G-17 and G-34 in equimolar quantities. In addition antisera to the N-terminus of G-17 and antisera to the N-terminus of G-34 were used. N=50 in each fasting group and N=25 in each group post-prandially. Post-prandial specimens were collected 2 hours after a standard protein meal. Chromogranin A (CgA) was measured in selected specimens from each group.

**Results:** Fasting reference range (RR) for gastrin (R98) is 0-45pmol/L. Results are given in pmol/L as medians (with range). In the gastrinoma group gastrin was 267 (57-31,857) giving complete overlap with AIAG, 545 (55-21,429). 12 % of gastrinoma patients presented with gastrin <70 and 24% with gastrin <200pmol/L, with ppi therapy 41 (7-262) (40%>RR), in DU Hp+ 36 (8-242) (25%>RR), in control Hp+ 24 (10-105) (14%>RR) and in control Hp- 19 (2-38) (all within RR). Use of regional specific antisera did not clarify diagnosis neither did CgA measurement.

**Conclusions:** An antiserum which detects G17 and G34 should be used for routine clinical determination of gastrin. Diagnosis of gastrinoma is not confirmed chemically without specific additional information. As interpretation is complex experience is required.