

Effect of Short-term Proton Pump Inhibitor Treatment and Its Discontinuation on Chromogranin A in Healthy Subjects

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Background: Chromogranin A (CgA) is used as a generic tumor marker for neuroendocrine tumors. Proton Pump Inhibitors (PPIs) are known to increase CgA, but it is not clear to what extent, and there is little information on how long PPIs need to be discontinued before the effect of PPIs has disappeared. Further, is it not known if this PPI effect is dependent on the CgA assay used. The objective of the study was to determine the effect of 7 day treatment with a PPI and its discontinuation on CgA in serum and plasma comparing 4 CgA assays.

Methods: 17 healthy subjects took lansoprazole 30 mg at bedtime for 7 days, and blood samples for CgA were obtained at baseline, day 7 of PPI use, and 1, 2, 4, and 7 days after discontinuation of the PPI. In all samples, CgA was measured using the following assays: Alpco (serum and plasma), Cis-Bio (serum and plasma), DAKO and Cis-Bio Radioisotope assay.

Results: When using the same assay, CgA was higher in plasma than in serum. Treatment with a PPI for one week resulted in a significant (about 2.5 fold) increase in CgA with significant interindividual variation. After discontinuation of PPI, serum CgA gradually declined with a half-life of 4-5 days.

Conclusion: Short term PPI use results in a significant increase of CgA in serum and plasma, an effect that is largely independent of the assay used. PPIs need to be discontinued for 2 weeks to fully eliminate their effect on CgA. This effect of PPIs needs to be considered when interpreting results of CgA measurements.