Effect of One Week of Proton Pump Inhibitor Therapy on Serum and Plasma Chromogranin A Concentrations

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Background:
- Chromogranin A (CgA) is a sensitive marker of neuroendocrine tumours.
- Used for diagnosis, prognosis, and monitoring of response to therapy.
- Use of Proton Pump Inhibitors (PPI’s) increases production of CgA.
- Except for some case reports, there is no information on the extent to which PPIs increase CgA, or on the duration of the effect after discontinuation of PPIs.

Methods:
- Healthy subjects took bedtime lansoprazole 30 mg x 7 days.
- Fasting blood samples for CgA were obtained at days 0 and 7, and also 1, 2, 4, and 7 days after discontinuation of the PPI.
- CgA levels were measured in serum and plasma using Alpco and CisBio assays, and plasma using the Dako assay.

Results:
- Use of PPIs for at least one week results in a more than 3-fold increase in CgA concentrations, this effect takes up to a week to disappear.
- There is major variation in CgA concentrations not only between assays, but also for the plasma versus serum CgA when using the same assay.
- This should be kept in mind when interpreting CgA results for diagnosis of and monitoring of neuroendocrine tumors.

Select References:

Participants:
- Male/Female: 5/9
- Age (years): 32.7±14.8
- Weight (Kg): 69.9±15.9
- Alcohol (#/day): 0.4±0.5
- Cigarettes/Day: 1±4
- Height (cm): 164±9
- BMI (Kg/m²): 25.7±4.8
- Systolic BP (mmHg): 115±8
- Diastolic (mmHg): 70±8
- Heart Rate (Beats/Minute): 74±11
- eGFR (mL/min/1.73m²): 111±16
- Data are presented as mean ± SD unless indicated otherwise.

Conclusion:
- Use of PPIs for at least one week results in a more than 3-fold increase in CgA concentrations, this effect takes up to a week to disappear.
- There is major variation in CgA concentrations not only between assays, but also for the plasma versus serum CgA when using the same assay.
- This should be kept in mind when interpreting CgA results for diagnosis of and monitoring of neuroendocrine tumors.