J Gastrointest Dig Syst 2018, Volume 8
DOI: 10.4172/2161-069X-C1-065

Analysis of serum chromogranin A in irritable bowel syndrome and gastroenteropancreatic neuroendocrine tumors patients in Indonesia

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Chromogranin A (CgA), an acidic hydrophilic glycoprotein produced exclusively by the secretory granules of neuroendocrine cells, is found to be increased in gastroenteropancreatic neuroendocrine tumors (GEP-NET) cases. Previous studies show that CgA has a high sensitivity as a serum biomarker in diagnosing GEP-NET. However, it has a low specificity since it is also increased in other conditions, such as irritable bowel syndrome (IBS). Diagnosis of GEP-NET through CgA serum level measurement has not been performed in Indonesia. Hence, this study aims to compare plasma CgA levels among normal patients, GEP-NET patients, and IBS patients in Indonesia. A cross-sectional study was performed among 176 individuals who had undergone Gastroenterology Consultation of which 126 patients were normal, 21 patients were IBS, and 29 patients were GEP-NET. IBS patients were identified using ROME III Criteria and GEP-NET patients were identified through histopathology examination from GI (Gastrointestinal) tract biopsy. Blood plasma serum was taken to measure the CgA serum level. Statistical analysis was performed using Kruskal-Wallis test. CgA serum levels were found to be significantly higher in both IBS and GEP-NET group compared to those in normal group. The average CgA serum levels in IBS, GEP-NET, and normal group are 76.66, 173.78, and 50.72 with the median 64.82, 66.23, and 48.90 respectively. The CgA value between normal and GEP-NET or IBS group is found to be significantly different ($p<0.001$). CgA serum levels remain a reliable biomarker to diagnose GEP-NET, suggesting the use of CgA for screening GEP-NET in Indonesia. However, the rise in CgA level found in IBS patients speculates future possibilities of developing GEP-NET in IBS patients. Further studies need to be performed to determine the relationship between IBS and GEP-NET, in terms of CgA.

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