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The role of Chromogranin – A as a relevant biomarker in the successful diagnosis of neuroendocrine tumors

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Statement of the Problem: Chromogranin A (CgA) or parathyroid secretory protein 1 is a member of the **granin** family of neuroendocrine secretory proteins and is located in the secretory vesicles of neurons and endocrine cells. We evaluated the pattern of Chromogranin A (CgA) plasma levels in a large number of patients diagnosed with neuro-endocrine tumors (NETs), a series of patients with chronic diarrhea or colitis and patients suspected of having some NET.

Patients and methods: Seventy nine patients' Chromogranin A levels were measured in a total of 106 specimens, from which 20 patients with non-tumor diagnosis, 18 patients with benign tumors, 17 patients with malignant tumors and 29 patients were suspected of having a NET. The CgA plasma levels were measured with the Dako Chromogranin A Elisa Kit.

Results: From 17 patients with malignant NET in a total of 29 measurements, 25 came positive for elevated CgA plasma levels with an average value of 230, 24 U/L. From 18 patients with benign NET in a total of 22 measurements, 15 came positive with an average value of 27, 45 U/L. From 20 patients with a non-tumor diagnosis and in a total of 25 measurements, 19 came positive with an average value of 82, 11 U/L. CgA plasma levels were significantly higher in patients diagnosed with a malignant NET compared to benign NETs (P<0,001). CgA plasma levels were higher in patients with a current non- tumor diagnosis compared to benign NET (P<0,001).

Conclusion: Our study confirms the high sensitivity and specificity of CgA in diagnosing neuro-endocrine tumors. It is necessary to use a cutoff range of 25 -30 U/L to obtain a high specificity in diagnosing benign NET and a cutoff range of 185 - 275 U/L for malignant NETs with the aim to exclude patients in whom CgA levels were elevated due to a non-tumor disease or pharmaceutical treatment.

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The Role of Circulating MicroRNAs as Markers of Disease Progression in Hepatitis C Virus Infected Egyptian Patients

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The discovery of miRNAs circulating in the peripheral blood has opened new directions of research to identify new non-invasive markers for diagnosis of diseases. Aim: The aim of the study was to evaluate the expression levels of circulating plasma miRNAs (miRNA-21 & miRNA-122) in Egyptian patients with chronic uncomplicated and complicated HCV. Patients & Methods: This study was conducted on 60 Chronic HCV infected patients. Patients were divided into three groups (20 patients each): uncomplicated HCV, cirrhosis, and hepatocellular carcinoma (HCC). All patients were subjected to laboratory investigations including complete blood picture, liver function tests. Expression levels of miRNA-21 and -122 in plasma using RT-PCR were determined. Results: MiRNA-21showed significant fold increase in chronic uncomplicated HCV while significant fold decrease in cirrhotic and HCC groups (P = 0.036). On the other hand, miRNA-122 showed significant fold elevation in both chronic uncomplicated and cirrhotic groups and significant fold decrease in HCC group (P = 0.005). ROC curve analysis for miRNA-122 yielded 68.4% sensitivity and 100% specificity for the differentiation of HCC patients from non-HCC at a cutoff 0.184. Neither miRNA-21 nor miRNA-122 was a successful predictor for HCC diagnosis. Conclusion: MiRNA-122 can be used as novel non-invasive biomarker for monitoring HCV related disease progression.

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