CLINICAL VALUE OF BIOCHEMICAL MARKERS OF NEUROENDOCRINE TUMORS

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Neuroendocrine tumors (NET) is a heterogeneous group of epithelial neoplasms that develop from cells of the diffuse endocrine system and found in any organ. A distinctive feature of NET is the ability to produce various biologically active peptides and amines. Currently, the most useful markers are the universal marker chromogranin-A (CgA) and specific markers serotonin and 5-hydroxyindolylacetic acid (5-HIAA). The analysis of the clinical significance of the biochemical markers of NETs was carried out by comparative analysis of their levels in serum and urine of 339 NET patients and 66 healthy people. Determination of plasma CgA, serotonin in serum and 5-HIAA in daily urine was performed using standardized ELISA methods using the Chromogranin A ELISA kit (Dako), Serotonin ELISA and 5-HIAA ELISA (IBL) test-systems.

The values of CgA, serotonin, 5-HIAA in patients with NET were significantly ($p < 0.001$) higher than the corresponding control values. Assessment of the diagnostic significance of CgA, taking into account the cut-off level 33 U/l (with a specificity of 98.5%), showed high sensitivity in the general NET group — 80.9%. The serial determination of the marker reflected the effect of treatment. The progression free survival in different treatment regimens for patients with NET has been associated with basal levels of CgA. The medians of serotonin and 5-HIAA levels were maximal in patients with carcinoid syndrome, significantly exceeding the corresponding values in NET patients without clinical manifestations.

The data indicate the possibility of using CgA, serotonin and 5-HIAA to improve the accuracy of diagnosis, evaluation of generalization and biological activity of NETs.

Keywords: neuroendocrine tumors; chromogranin A; serotonin; 5-hydroxyindolylacetic acid; carcinoid syndrome.