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18. REGULATORY PEPTIDES AS DISEASE MARKERS

by Professor Theodorsson Elvar, Ph.D.,
Linköping University, Faculty of Health Sciences.
Linköping University, Department of Biomedicine and Surgery, Division of clinical chemistry.
Östergötlands Läns Landsting, Centre for Laboratory Medicine, Department of Clinical Chemistry.
Linköpings, Sweden

ABSTRACT

Measurement of regulatory peptides has an established role in the diagnosis and monitoring of heart failure, severe infections and of several peptide-producing tumours, including endocrine pancreatic tumours, carcinoid tumours, medullary thyroid carcinomas; pheochromocytomas and neuroblastomas. Proper sample handling (rapid cooling and freezing) is important since most regulatory peptides (except brain natriuretic peptides (BNP, N-BNP), procalcitonin, gastrin and pancreatic polypeptide) are labile in plasma. High assay specificity is generally an advantage but when diagnosing peptide-producing tumours the immunoassay used should preferably have broad specificity for the peptide family to be analysed since endocrine tumours may result in elevated concentrations of different spectra of the peptides in individual patients. Peptide-producing endocrine tumours co-secrete chromogranin A together with their respective characteristic hormones/regulatory peptides. Chromogranin A is therefore the most valuable general marker for neuroendocrine tumours. Analyses of several regulatory peptides during diagnosis and follow-up in patients in endocrine oncology units are well established. However, very few studies have as yet addressed the specificity and predictive value of analyses of regulatory peptides. The predictive value of any laboratory test is dependent not only on quality of test and the reference limits used, but also on the prevalence of disease in the population under study. In the case of endocrine tumours the prevalence of the disease in the population is extremely low, and results from analyses of regulatory peptides in patients not known to have peptide producing tumours should be interpreted with utmost care so that further, unnecessary investigations are avoided.