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THE ENDOCRINOLOGY LABORATORY AS A SERVICE:

(b) INTEGRATED IN CLINICAL CHEMISTRY

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Well above 100 hormones are presently known to occur in man, deriving from numbers of organs such as the thyroid, gastrointestinal tract, kidney, brain, hypophysis, etc. Of these, 15-20 are routinely used in diagnosis and treatment (total >50 000/year/million inhabitants), while the bulk is confined to the elucidation of physiologic and pathophysiologic mechanisms in very special diseases or in research set ups.

Hormones do not differ essentially in structure from other components routinely estimated in clinical chemistry. They are either organic substances with a relative molecular mass of 300 to 800 or polypeptides build up of from 6 to 1 000 amino acid residues.

The methodologies for their detection is mostly based on isotope dilution and binding to a receptor (antibody, binding globulin, cell surface receptor, etc.). The specific activity of the labelled compound mostly poses no problem.

In contrast the detection limit is set by the reciprocal value of the affinity constant of the binding protein.

Hence, the substance concentration of presently known hormones is 10^{-12} mol/l or higher.

The problems of calibrators, performance characteristics, methodology, etc. are much similar to the ones for any other substance in biological fluids to be quantitated and is therefore best dealt with in departments of clinical chemistry, at least what concerns the routine analysis of these quantities.

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