SERUM TRYSIN CONCENTRATION IN RENAL DISEASE

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The present investigation was undertaken to test whether the determination of serum trypsin is helpful in the diagnosis of pancreatitis in patients with chronic renal failure. The possibility of renal metabolism of serum trypsin was also investigated.

Methods

Using a RIA kit (Behring-Werke, Marburg) serum immunoreactive trypsin (IRT) concentration was measured [1] in 29 patients with chronic renal failure on conservative treatment and without evidence of pancreatic disease. In addition, the influence of haemodialysis (n = 14) and haemofiltration (n = 9) treatment on IRT was tested.

Results

Plasma IRT levels were significantly correlated with the extent of renal damage as determined by serum creatinine concentration (Figure 1). All patients with serum creatinine values above 355μmol/L had IRT levels above the normal range of 105–480ng/ml. In RHT patients neither haemodialysis (994 ± 68ng/ml before 910 ± 68ng/ml after treatment; mean ± SEM) nor haemofiltration (1024 ± 123 ng/ml before, 937 ± 123ng/ml after treatment) significantly reduced elevated IRT values.

Discussion

Our results demonstrate that in spite of minimal renal excretion of trypsin in normal subjects [2] IRT — like other low molecular weight proteins such as myoglobin and β2-microglobulin — is regularly elevated in chronic renal failure. Our results provide evidence for an important role of the kidneys in the catabolism of trypsin. Furthermore, we conclude that in patients with chronic renal
Figure 1. Correlation between serum creatinine and serum IR-trypsin

failure the determination of serum IRT levels is not helpful in the diagnosis of pancreatic disease.

References

2 Lake-Bakaar, G and Summerfield, JA (1978) Gut, 19, A960