Elevated Bile Acid Serum Concentrations in Uremics

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Dear Sir,

The serum concentrations of bile acids, measured with the enzymatic method [1], were found elevated in some chronic uremics; the results were confirmed using a RIA method (Becton Dickinson, Orangeburg, Mass., USA). The question arose whether this blood chemical abnormality was associated with renal failure in the absence of overt liver disease.

Therefore we increased the dosage of serum bile acids to 75 uremic patients without any liver or bile tract diseases, as indicated by normal serum levels of alanine amino-transferase, aspartate aminotransferase, bilirubin and γ -glutamyl transpeptidase; all the patients were HCVAb- and HBsAg-negative. Thirty-three patients (21 males and 12 females, aged 21-60 years) were on conservative dietary treatment, whereas 42 uremics (26 males and 16 females, aged 23-82 years) were on maintenance hemodialysis.

Blood samples were taken before starting the hemodialysis session or at fasting in the morning. Serum samples were stored at -20°C ; the amount was determined by the enzymatic procedure. Values are expressed as mean $\pm$ standard deviation. In our series, the values in normal subjects are $2.6 \pm 1.7 \mu\text{mol/l}$ using the enzymatic method and $2.2 \pm 1.9 \mu\text{mol/l}$ using the RIA method; therefore, $6.0 \mu\text{mol/l}$ was taken as the upper normal limit for the bile acid concentration.

Elevated serum concentrations of bile acids were found in 20 out of the 75 uremics (26.7%), and the prevalence was similar in patients on conservative (27.3%) and on dialysis treatment (26.2%). In addition, the mean of the abnormal values did not differ between uremics on conservative and on hemodialysis treatment (12.0 ± 4.3 vs. $12.9 \pm 6.4 \mu\text{mol/l}$, respectively). We conclude that elevated concentrations of bile acids in serum are present in quite a high percentage of uremics both on hemodialysis and on conservative dietary therapy.

The existence of a subclinical liver disease [2] or an abnormal enterohepatic cycle of bile acids [3] might explain these findings. However, up to now, the cause(s) and the possible effect(s) of abnormally high serum bile acids in uremia are not known.

References

Mashige F, Tanaka N, Maki A, Kamci S, Yamana M: Direct spectrophotometry of total bile acid in serum. *Clin Chem* 1981;27:1352-1356.

Barnes S, Gallo GA, Trash DB, Morris JS: Diagnostic value of serum bile acid estimations in liver disease. *J Clin Pathol* 1975;28:506-509.

Gordon SJ, Miller LJ, Hafner LJ, Kinsey MD,
Kowlessar OD: Abnormal intestinal bile acid
distribution in azotaemic man; a role in the
pathogenesis of uraemic diarrhoea. Gut 1976;
17:58-67.

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