Simvastatin Does Not Increase Lipid Peroxidation in Uremic Patients

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Table 1. Follow-up of creatinine (Cr); total cholesterol (TC) triglycerides (TG) and MDA in the 6 patients at baseline (TO) 4 (T4) and 6 months (T6).

T6

References

TO

T4

Dear Sir,

It is well known that lipid metabolism is altered in uremic patients. In a previous study, we reported that lipid peroxidation (LP) is modified in renal failure and that although polyunsaturated fatty acids improve triglyceride levels, they also increase LP, as measured by malondialdehyde (MDA) concentration in the serum [1].

The aim of the present study was to show the effect of Simvastatin (S), an inhibitor of HMG Co A reductase, on LP in uremic patients. Six patients were studied. They were 3 males and 3 females; mean age was 47 ± 18 years. The primary renal diseases were IgA nephropathy (1 patient), reflux nephropathy (1 patient), focal glomerulosclerosis with ne-phrotic syndrome (1 patient), chronic glomerulonephritis (2 patients), and interstitial nephritis (1 patient). During the 6 months preceding the study, all patients presented a very stable chronic renal failure with a serum creatinine value of $219 \pm 86 \mu\text{mol/l}$. They were maintained on the same protidic diet (0.8 g/kg/day) and antihypertensive treatment during the period preceding the introduction of S and during the period of study. In spite of this diet they remained hypercholesterolemic ($6.71 \pm 0.61 \text{ mmol/l}$) and hyper-triglyceridemic ($2.60 \pm 0.71 \text{ mmol/l}$) at the time of inclusion. At baseline, blood was obtained for measurements of serum creatinine, cholesterol, triglycerides and MDA levels; then patients were given 10 mg/day of S for 6 months. All patients were evaluated on the basis of a physical and biochemical examination before and after treatment at the 4th and 6th months: serum creatinine ($\mu\text{mol/l}$), total

cholesterol, triglycerides (mmol/l), MDA ($\mu\text{mol/l}$), aspartate aminotransferase (ASAT, U/l), alanine aminotransferase (ALAT;

$p < 0.05$, vs. TO.

U/l) and creatinine phosphokinase (U/l). Our results show that the S was well tolerated. CPK levels increased, without myalgia, in only 1 patient, at the last follow-up measurement (6 months). ASAT and ALAT were not modified table 1.

In chronic renal failure several studies showed: (1) an increase in oxidative phenomena in all membranes considered responsible for an increase in plasma and erythro-cyte MDA, red blood cell hemolysis and platelet dysfunction [2], and (2) a decrease in serum antioxidant activity which appears to be due to the metabolic modifications induced by uremia [3, 4]. S treatment does not seem to increase MDA in our uremic patients. The lipid profile improved while renal function was not modified throughout the study. Our study shows: (1) a good tolerance of S in uremic patients, (2) an improvement of lipid levels with the treatment, and (3) no increase in MDA plasma levels, a lipid peroxidation marker.

In future, the absence of any modification of LP under S treatment should be checked, whenever the treatment is carried out for more than 6 months. It also remains to be seen if the correction of the cholesterol level and the absence of any negative result on LP may favorably affect renal function.

References

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