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Antioxidant effects of a supplemented very low protein diet in chronic renal failure.

[Peuchant E](#), [Delmas-Beauvieux MC](#), [Dubourg L](#), [Thomas MJ](#), [Perromat A](#), [Aparicio B](#), [Clerc M](#), [Combe C](#).

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Increased peroxidation of lipids in red blood cells (RBC) in patients with advanced chronic renal failure (CRF) reflects increased generation of reactive oxygen species (ROS), which may contribute to the metabolic damage induced by CRF and to its progression. We have evaluated parameters indicative of lipoperoxidation (LPO) of RBC at baseline in patients with CRF compared to controls, and the effects of a very low protein diet supplemented with amino and keto acids and vitamins A, C, E (VLPD) over a 6-month period. The presence of peroxidation damage in CRF patients before the administration VLPD was demonstrated by elevated levels of free malondialdehyde (MDA) ($p < .0003$) and decreased levels of polyunsaturated fatty acids (PUFA), particularly C20:4 ($p < .001$), C22:4 ($p < .0001$) and C22:5 ($p < .0001$) when compared to controls. Similarly, RBC vitamin E content was significantly decreased ($p < .0001$) while enzymatic activities were unaltered. VLPD reduced erythrocyte LPO as suggested by (a) decreased levels of free and total RBC MDA ($p < .003$ and $p < .03$, respectively), (b) increased levels of PUFA, particularly C22:4 and C22:5 ($p < .003$ and $p < .03$, respectively), and (c) increased levels of vitamins A and E ($p < .001$ and $p < .04$, respectively) as compared to prediet results. Antioxidant enzyme activities were not modified. These results suggest that VLPD has a protective role against LPO of erythrocytes in patients with CRF.

PMID: 8958156 [PubMed - indexed for MEDLINE]

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