Introduction

Cardiovascular disease and renal disease are inexorably linked. The morbidity and mortality from cardiovascular disease are significantly increased in patients with renal failure, on dialysis and after renal transplantation. Patients with end-stage renal disease have a substantially elevated cardiovascular mortality rate, with the risk being 10–20 times higher than observed in an age- and sex-matched healthy population. Dialysis treatment has significantly improved during the last 20 years. The amelioration in technical aspects has improved many biochemical parameters and has induced total acceptance by patients with end-stage renal disease, but has not been associated with a significant reduction in mortality rate among the patients; in fact, cardiovascular disease remains the leading cause of death among end-stage renal disease patients on replacement therapy, accounting for 40–50% of all deaths.

Left ventricular hypertrophy, reduced compliance of the large arteries and atheromatous disease of the coronary bed represent the main cardiovascular alterations of uraemic subjects, particularly severe in patients on dialysis. This increased cardiovascular risk is only partly accounted for by traditional risk factors. Atherosclerosis, one of the classic risk factors, appears to be caused by a synergism of different mechanisms, such as malnutrition, oxidative stress, genetic factors and chronic inflammation. A recent area of intense interest for nephrologists is the relationship between the microinflammatory state seen in uraemia, malnutrition and accelerated atherosclerosis. Laboratory-based evidence and epidemiological studies have in fact found a strict association between the atherosclerotic process, in particular coronary heart disease, and plasma proteins involved in the acute-phase response, both in the normal population and in uraemic patients.

To reduce the unacceptably elevated death rate from cardiovascular disease in uraemia and on dialysis, we should clearly identify the risk factors that may trigger and maintain vascular damage. This knowledge, together with the increased awareness of inflammation in the pathogenesis of the vessel wall lesions, may favour the achievement of possible therapeutic strategies.

The relationship between inflammation, malnutrition and cardiovascular disease in patients treated by maintenance dialysis was investigated very actively in a Symposium held in Chia Laguna (Sardegna, Italy) in May 2001. The various reports and a summary of the intense Discussion are reported in this Supplement.

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