Vitamin D receptor alleles and C-reactive protein in hemodialysis patients

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SUMMARY

Cardiovascular disease due to atherosclerosis is the major determinant of morbidity and mortality in uremic patients. Inflammation is essential in the development of atherosclerosis and markers of inflammation, in particular C-reactive protein, predict the cardiovascular risk. Vitamin D exerts its effects through the Vitamin D Receptor, coded for by a gene showing several polymorphisms associated with a variety of diseases and differential responses to Vitamin D. We evaluated the association between four Vitamin D Receptor polymorphisms (*i.e.* those identified by the restriction enzymes *Bsm*I, *Apa*I, *Taq*I and *Fok*I) and serum level of C-reactive protein in 88 hemodialysis patients routinely treated with active Vitamin D (calcitriol). Absence or presence of the *Bsm*I, *Apa*I, *Taq*I, and *Fok*I restriction sites were denominated B and b, A and a, T and t, F and f respectively. Our results show that the b, a, T, alleles were more frequent in patients with elevated serum level of C-reactive protein compared with patients with normal C-reactive protein level. The differences were statistically significant ($p < 0.05$). These results suggest that the Vitamin D Receptor alleles b, a, T could be considered novel risk factors in the pathogenesis of inflammation-related, atherosclerosis-dependent cardiovascular disease risk in uremic patients.

INTRODUCTION

Chronic inflammation plays an important role in the pathogenesis of cardiovascular disease in uremic patients (Panichi et al., 2000). Several studies demonstrated a strong association between elevated serum level of C-reactive protein (CRP), the prototypical acute phase response protein, and cardiovascular disease in general