Ciclosporin-Nicardipine Interaction

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It has been reported that calcium channel blockers induce a rise in serum ciclosporin as estimated with the radioimmunoassay (RIA) kits based on polyclonal antibody [1–3]. Increased ciclosporin blood concentrations may be due to interference by nicardipine with ciclosporin clearance, probably because both drugs are predominantly eliminated by the liver via cytochrome P 450 hepatic enzymes. Recently, a new specific monoclonal RIA for the therapeutic monitoring of ciclosporin has replaced the old RIA kits. We report the effect of nicardipine on ciclosporin levels using both RIA kits.

A 60-year-old woman was given ciclosporin for idiopathic uveitis. Nicardipine 20 mg three times daily was associated in a prospective attempt to prevent ciclosporin-induced renal damage. Six months later her serum creatinine was 90 $\mu\text{mol/l}$, and the daily ciclosporin dosage was 4 mg/kg with a serum trough level of 152 ng/ml and 98 ng/ml with the polyclonal and monoclonal RIA kits, respectively. Nicardipine was then interrupted, while ciclosporin was kept unchanged. Nicardipine withdrawal induced a sharp decline in serum ciclosporin levels estimated with both RIA kits (fig. 1). Renal function remained unchanged.

Our results strongly suggest that nicardipine affects either ciclosporin bioavailability or hepatic metabolism and not the metabolism of ciclosporin metabolites. When monitoring ciclosporin therapy with a specific monoclonal RIA one should be aware that nicardipine increases serum ciclosporin levels.

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Fig. 1. Serum ciclosporin levels in relation to nicardipine therapy.

References

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