Acute Effect of Erythropoietin on Endothelin Release in Uremia

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p > 0.05

travenously at a single dose of 75 U/kg. Blood samples for ET-1 determination were taken at 15, 30, and 60 min after injection. Blood pressure readings were recorded simultaneously. Plasma ET-1 levels were measured by the ELISA technique (Amersham, UK). The statistical significance of the alterations in ET-1 concentration and blood pressure readings throughout the study was determined by Friedman two-way ANOVA test.

Dear Sir,

The correction of anemia by recombinant human erythropoietin (rH-Epo) in uremic patients may exacerbate hypertension in some hypertensive patients or raises blood pressure in some previously normotensive subjects [1-4]. But the underlying mechanism has not yet been clarified and various causes such as increased blood viscosity and total red cell mass inducing an increase in peripheral resistance [5] and reversal of compensatory vasodilatation induced by renal anemia [6] have been proposed before in several studies.

Regarding the pathogenetic factors causing increased systemic vascular resistance during rH-Epo therapy, some other mechanisms such as activation of neurohumoral systems and imbalance of local endothelial factors have been proposed in recent years [7]. Although the presence of some reports suggesting the direct relationship between rH-Epo injection and increased endothelin-1 (ET-1) levels and blood pressure [8-11], a final clear-cut conclusion has not yet been drawn. In order to evaluate the acute effect of rH-Epo injection on ET-1 release in uremic patients, we studied plasma ET-1 levels after a single-dose i.v. rH-Epo administration in 10 predialysis patients.

We included 10 patients with chronic renal failure, previously untreated by dialysis (mean age 45 years, range 29-58; 6 females, 5 males). The patients had never taken rH-Epo before. After the baseline sampling, rH-Epo (Eprex®, Cilag, Switzerland) was given in-

-160

2 -

15 30

Time after rH-Epo injection (min)

Fig. 1. Effect of rH-Epo injection on endothelin-1 levels in uremic patients.

Mean blood pressure levels did not show any statistically significant changes during the test ($p > 0.05$). Figure 1 shows that the determined changes in mean ET-1 concentrations after rH-Epo injection were not found to be statistically significant ($p > 0.05$). In conclusion, the results of our study indicate that rH-Epo injection itself does not have any direct effect on ET-1 release in uremic predialysis patients.

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