The Neopterin/Creatinine Ratio Cannot Be Used to Diagnose Rejection Episodes in Renal Transplant Recipients

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Dear Sir,

Drs. Kaneda and Suga [1] reported that they were able to discriminate the effect of renal dysfunction on serum neopterin levels from immunological influence in renal transplant recipient with the use of NPT index (serum neopterin/serum creatinine). They reported an increased NPT index in 7 out of 10 patients during acute rejection as

NPT index (10-4) 10

compared to values 2-3 days before rejection and a lower NPT ratio in patients treated with ciclosporin (CS), methylprednisolone (MP) and azathioprine (Aza) in comparison to patients treated with MP in combination with Aza.

We have analyzed our material including 92 recipients of renal allografts with respect to the NPT index [2]. The highest NPT index was found in patients suffering from cytomegalovirus infections (CMV) and other infections ($p < 0.0015$) (fig. 1) in comparison to patients with stable renal function, uremia, acute rejection and CS-induced nephrotoxicity [2, for definition and diagnose of the different groups]. There were no differences between CS- and Aza-treated patients with stable renal function. In addition, it was not possible to discriminate rejection or CS toxicity from stable renal function or to differentiate rejection from CS-induced nephrotoxicity by use of the NPT index. We therefore conclude that monitoring of serum neopterin levels in renal transplant patients is not useful in the form of the NPT index. The NPT index may, however, be helpful in the diagnosis of infections, especially of CMV infections.

n=23

Stable (CS)

X

T

n=9

n=19

Stable Uremia (Aza)

T

v •

n=16

Rej.

t

V I

n=17

n=9

n=12

CS-tox. CMV Other int.

References

Kaneda, Y.; Suga, A.: Usefulness of serum neopterin in renal transplantation considering the neopterin/creatinine ratio. *Nephron* 49:259–260 (1988).

Bäckman, L.; Ringdén, O.; Björkhem, I.: Monitoring of serum neopterin levels in renal transplant recipients. Increased values during impaired renal function and cytomegalovirus infection. *Nephron* 46:319–322 (1987).

Fig. 1. Individual NPT index during stable renal function treated with CS or Aza
uremia

acute rejection (Rej.)

CS-induced nephro-toxicity (CS-tox.)

CMV and other infections. Horizontal lines indicate medium values. The statistical differences were calculated using the Mann Whittney test and are given in the text. Horizontal lines indicate median values.