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LETTER TO THE EDITOR

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Procalcitonin increase after anti-CD3 monoclonal antibody therapy does not indicate infectious disease

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Sir: Antilymphocyte therapy with monoclonal OKT3 antibody is used either for induction of immunosuppression in the early post-transplantation period or treatment for steroid-refractory acute rejection [4]. Fever often occurs as one of the first side effects of antilymphocyte therapy. In a previous study, we demonstrated the possibility to differentiate between infection and rejection with procalcitonin (PCT) in the case of fever of unknown origin (FUO) in liver transplant recipients [2]. All patients suffering from infectious complications demonstrated an increase in PCT in contrast to patients suffering from rejection or those with an uncomplicated postoperative course. Based on these results, routine PCT was introduced as a standard monitoring parameter for transplant patients at our clinic. Meanwhile, we have monitored eight patients undergoing OKT3 treatment for steroid-refractory rejection. After the first OKT3 injection all patients developed a significant increase of PCT plasma levels without any indication of infectious disease. The mean PCT plasma level measured before administration was 1.05 ± 0.45 ng/ml. Twenty-four hours later, plasma levels were 12.1 ± 6.4 ng/ml (Fig. 1, $P = 0.003$, paired t-test). CT scans, blood cultures, and swabs for microbiological pathogen identification gave no evidence of an infectious disease for any of the patients.

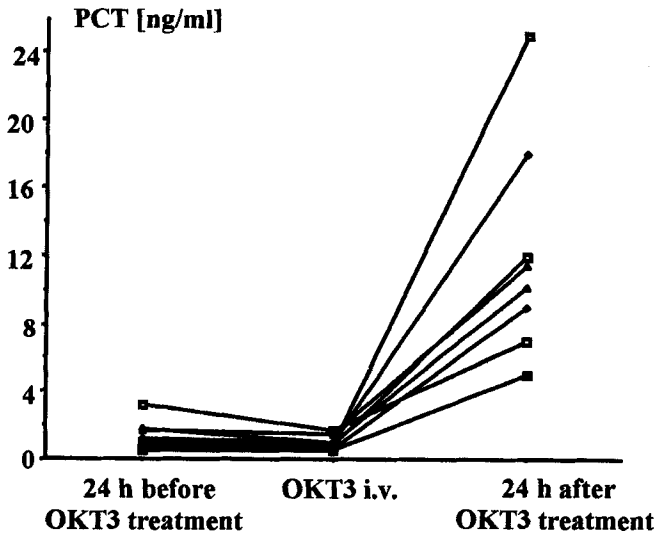

Fig. 1 Changes of procalcitonin *(PCT)* plasma concentrations in eight patients after liver transplantation who were treated with OKT3 for rejection therapy

It is known that OKT3 induces a massive release of tumor necrosis factor alpha (TNF-α) [1]. Oberhoffer et al. [3] found a pronounced stimulatory effect of TNF-α on expression of PCT mRNA. However, the rise of PCT levels observed under rejection therapy with OKT3 is not directly OKT3-mediated, but due to the intermediate step of TNF-α release.

We conclude from our data that a rise in PCT levels during OKT3 therapy in this specific clinical situation does not indicate infectious disease and might prove misleading in the diagnosis of infection in case of FUO.

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