High Levels of Serum Amyloid A Persist for a Long Time after Kidney Transplantation

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Dear Sir,

Increased serum amyloid A (SAA) concentration reflects the activation state of cell-mediated immunity, since the proteins are synthesized in the liver following induction by monokines (interleukin-1, interleukin-6, tumor necrosis factor and interferon- γ) [1,2]. Therefore, the measurement of SAA has been progressed by several investigators for monitoring of acute rejection. However, when SAA levels were determined with a sensitive method, the results of the assay were far from what had been anticipated: high SAA levels persisted in all patients for months or years after grafting, irrespective of rejection and/or infection episodes.

Figure 1 shows the results of monitoring of SAA levels in 5 consecutive living-related renal transplantations. There was no marked difference between these patients and those of other centers in operation and immunosuppression factors. Of these patients, only 1 experienced a distinct episode of graft rejection (LD-8, at 110–120th postoperative day), and 1 had an episode of adenovirus cystitis (LD-11, at 28–35th postoperative day). In these patients during their stable periods, and in others who did not experience any inflammatory complications, the SAA levels remained above normal for months or over a year after grafting.

The technical difficulties in accurate, reproducible and sensitive quantification of SAA have been widely noted [3]. The assay methods employed in previous studies were single radial immunodiffusion (SRID) or conventional nephelometry [4–6] which are unsatisfactory for determining low concentrations. Our method, the dot-blot enzyme immunoassay [7], was so sensitive that it brought out the new findings for SAA in kidney transplantation.

It is generally accepted that episodes of acute rejection can develop many months or even years after graft-

300

100 200

Days after transplantation

Fig. 1. SAA levels in patients with renal allografts. The concentration of SAA in 76% of the normal population is below the baseline level ($7\mu\text{g/ml}$).

ing, possibly due to the modifying influence of the post-transplantation immunosuppressive regimes [8]. Our study suggested that mild responses to an allograft (we call this latent acute rejection) occur persistently for several months or years after successful kidney transplantation.

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