Dear Sir,

As I am interested in the problem of low-molecular-mass proteins and their relationship to the glomerular filtration rate (GFR), I studied the paper of Kusano et al. [1] with great interest. Another recent paper [2] concerning α₂-microglobulin in a similar way shows the clinical usefulness of this parameter. I am convinced that the determination of low-molecular-mass proteins can provide suitable information on patients suffering from chronic renal disease, especially within the so-called creatinine-blind range. Recently, I have published an optimized micromethod of determining ribonuclease activity in serum and in urine [3], and we are checking now its diagnostic significance for detecting reduced GFR.

However, I cannot accept the data presented by Kusano et al.[1] as convincing in this respect. The authors did not mention the upper normal limits of the investigated parameters of α₂-microglobulin, β₂-microglobulin and creatinine, but pointed out that these corresponded to creatinine clearances of about 100, 70 and 50 l/day, respectively. Using the regression equations given in the paper and taking into account the mentioned values of creatinine clearance, I calculated these upper normal values and arrived at the following figures: 2.4 mg/l for β₂-microglobulin, 28.8 mg/l for α₂-microglobulin and 1.76 mg/dl for serum creatinine. These, in turn, give rise to two questions: First, why did the authors select such high upper normal values of serum creatinine for their calculations? It is well known that reference intervals of creatinine depend very much on the method used, but such a level of creatinine can doubtlessly be considered abnormal. If the more appropriate upper level of creatinine of 1.2 mg/dl were assumed, a corresponding GFR value of about 82 l/day would result.

Second, does the upper level of α₂-microglobulin used for the calculation result from the determination in the 7 healthy subjects? In two other papers the authors gave means ± SD of 18.9 ± 5.6 [4] and 23.7 ± 4.6 mg/l [5]. Consequently, taking into account upper normal limits as means ± 2 SD, differing corresponding value of creatinine clearance can be calculated. The levels of α₂-microglobulin in serum obviously depend on the method [4]. Weber et al. [2], also using the method of single radial immunodiffusion, determined 42 mg/l of α₂-microglobulin as the 95th percentile. For this reason, it is my impression that the paper of Kusano et al. [1] confuses its readers and does not surrender all information. The authors could help the interested reader to understand their findings better by publishing some clarifications on this issue.

References


