Sir,

Recently, van Rossum and colleagues [1] evaluated the renal extraction of cystatin C compared with $^{125}$I-iothalamate in 40 patients with unilateral renal artery stenosis. The authors reported that the mean difference between these two measures of glomerular filtration rate was small (0.002); however the limits of agreement by Bland and Altman technique [2] were quite large (−0.271 to 0.267). The authors concluded that this difference may reflect previously unrecognized tubular secretion of cystatin C and that cystatin C may not be a useful endogenous measure of kidney function.

The cystatin C assay employed by van Rossum and colleagues [1] uses a turbimetric immunoassay which has relatively poor intra-assay precision [3]. Using their controls, the authors report an intra-assay coefficient variation of 11%, substantially greater than that for creatinine [1]. The authors repeated cystatin C measurements in triplicate. Whereas this may improve the precision of the mean value, it would do little to improve the variation between measurements. Cystatin C is freely filtered at the glomerulus [4], more than 99% is catabolized by proximal tubular cells [5], and the urinary concentration of cystatin C is very low under normal physiological conditions [6]. Perhaps the imprecision in measurement of cystatin C led to the larger limits of agreement, rather than previously unrecognized renal tubular secretion. A nephelometric assay that has lower coefficients of variation is commercially available [7]. Would the results have been similar with this assay?

Despite its limitations, creatinine measurement is precise, readily available, and inexpensive. Cystatin C may eventually prove useful in clinical situations where serum creatinine concentrations might erroneously mislead clinicians to believe that the glomerular filtration rate is normal, rather than as a universal replacement of serum creatinine and associated derived estimating equations. Examples where cystatin C measurement might prove most useful include evaluation of kidney function among persons with advanced age [8] and low muscle mass [8,9], and among persons with normal or near-normal glomerular filtration rate [10].

Conflict of interest statement. None declared.

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