Letter and Reply

Advance Access publication 13 February 2007

Lean body mass to estimate GFR

Sir,

The interesting paper by Taylor et al. [1] lends support to the idea that the variables used in the different formulas to estimate GFR (glomerular filtration rate) are surrogate markers of lean body mass. The following letter by Rigalleau et al. [2] did not fully confirm the findings, at least in diabetic patients.

We are rather puzzled by a part of the analysis conducted in the Taylor’s paper however, i.e. it is not clear to us whether the GFR estimated by the new formula (including lean mass) and by the Cockcroft and Gault formula have been normalized in relation to body surface area. We feel that this is an important issue to consider for a proper comparison with measured GFR and the modification of diet in renal disease (MDRD) formulae, which express GFR values as ml/min/1.73 m². It is also not clear why the authors did not match their data against the original, 6-variable MDRD formula. It would be interesting to know whether Taylor’s results afford an improvement over the GFR measured or estimated by the Cockcroft and Gault formula, all after normalizing for body surface area, or the classical MDRD calculation.

Conflict of interest statement. None declared.

Department of Biomedical and Surgical Sciences
University of Verona, Italy
Email: giovanni.gambaro@univr.it

doi:10.1093/ndt/gfm030

Advance Access publication 13 February 2007

Reply

Sir,

We thank Dr Gambaro et al. for their interest in our article. In our study, GFR (glomerular filtration rate) determined by [125I]iothalamate clearance was expressed per 1.73 m² of body surface area, as shown in the text and in Table 1. As these GFR values were used to derive the predictive formula, then body surface area would be an incorporated parameter in this equation. Also, in our publication, comparisons were made between our equation and the 6-variable MDRD equations, as shown in Table 3, but only the simplified MDRD formula was used in the set of figures, as it was the most accurate for our study population. It is important to note that our data does not challenge or invalidate the MDRD formulae but actually there is agreement between the data sets. Our principal purpose was to demonstrate that the relationship between lean body mass and serum creatinine are the primary factors in the establishment of these predictive formulae and all other variables incorporated simply suggest this basic relationship.

Conflict of interest statement. None declared.

Medical University of South Carolina
Timothy Taylor
171 Ashley Avenue, Charleston
South Carolina
29425, USA
Email: taylortp@musc.edu
doi:10.1093/ndt/gfm054

Letters

Advance Access publication 16 November 2006

Renal handling of cystatin C

Sir,

Recently, van Rossum et al. [1] published an interesting report on renal extraction of cystatin C (cys C). However, we have some concerns regarding the results and interpretation of these.

First, the authors showed a high correlation between 1/cys C and glomerular filtration rate (GFR) measured as iothalamate plasma clearance. In contrast to that, cys C excretion ratio (Ethal) did not correlate with iothalamate excretion ratio (Ethal, r = 0.05; P = 0.6, calculated from the data given in (Table 1) of the article). Since correlation of 1/cys C with GFR suggests renal elimination of Cys C and concomitantly renal iothalamate excretion ratio determines iothalamate GFR, it is not understandable why Ethal shows no correlation with Ecyt C.

Secondly, in addition to the missing correlation of Ecyt C and Ethal, some patients (e.g. patients 28 and 40) showed extreme divergences of Ecyt C between left and right, whereas iothalamate excretion ratios were similar (e.g. patient 40: Ecyt C: 0.44 vs 0.03, Ethal 0.13 >< 0.18; patient 28: Ecyt C: 0.33 vs 0.07, Ethal 0.16 vs 0.20). This phenomenon is not discussed appropriately and raise concerns with respect to the validity of the applied techniques.

Thirdly, based on the presumption that sieving coefficient of cys C is lower than that of iothalamate, the authors concluded that cys C may undergo tubular secretion, since mean Ethal and Ecyt C were similar. However, the similarity disappears when median or absolute mean difference are considered (Ethal – Ecyt C: median = 5 and absolute bias = 11.3). Moreover, median Ethal was slightly higher than Ecyt C (20 vs 16) which seems to be in line with the presumed lower
in the body, even if it is not manifest. An induration reaction is indirect evidence of an active tuberculous lesion. For Permissions, please email: journals.permissions@oxfordjournals.org

Conflict of interest statement. None declared.

Department of Internal Medicine I Ume Pöge
University of Bonn Thomas Gerhardt
Sigmund-Freud-Straße 25 Rainer P. Woitas
D 53105 Bonn, Germany
Email: dr.poege@nephrologie-bonn.de

doi:10.1093/ndt/gfl658

Advance Access publication 30 November 2006

Ulcerative tuberculin skin test in a dialysis patient

Sir,

A 53-year-old lady, hypertensive since 2003, was diagnosed with end-stage renal disease (ESRD) in January 2006 and initiated on continuous ambulatory peritoneal dialysis (CAPD). She has been on three exchanges per day with 2.5% dextrose solution. She used to achieve 1.5 L of ultrafiltration per day. Prior to this presentation, she had never suffered any mechanical or metabolic complications. Her peritoneal equilibration test revealed her to be a high average transporter. She presented with complaints of breathlessness, cough with no expectoration and anorexia. She had no peripheral oedema and fever. Her blood pressure was under control and echocardiography was normal. A chest radiograph revealed distention of pulmonary veins. Suspecting congestive heart failure, she was initiated on continuous cyclic peritoneal dialysis. There was an improvement in the breathlessness and cough, but her anorexia and fatigue had worsened. A tuberculin skin test (TST), was done with 5TU which ulcerated within 24 h, suggesting an infection due to Mycobacterium tuberculosis (Figure 1). She improved within a week of initiation of isoniazid (5 mg/kg), rifampin (15 mg/kg) and pyrazinamide (10 mg/kg), aimed at treating latent tuberculosis. A retrospective search for tuberculous infection was negative. She had a scar of BCG vaccination on her deltoid, administered in her infancy.

False negative reactions to TST are reported in HIV infection, severe tuberculous disease, chronic renal failure, diabetes mellitus, old age and newborn infants. The prevalence of anergy to TST was significantly higher in the ESRD population (44% vs 16%, P < 0.001) [1]. An ulcerative TST reaction is indirect evidence of an active tuberculous lesion in the body, even if it is not manifest. An induration >10 mm is considered positive in persons with a medical condition that increases the risk of tuberculosis, which includes ESRD patients [2]. Three regimes, isoniazid only, rifampin only, or rifampin plus pyrazinamide, are recommended for the treatment of latent tuberculosis. We used a three-drug regime as this is the practice at our institute. Two consecutive TSTs combined with a chest radiograph should be performed at the start of dialysis, to detect those patients with latent Mycobacterium tuberculosis infection [3].

Conflict of interest statement. None declared.

Sir,

In light chain deposition disease (LCDD), monoclonal immunoglobulin (Ig) light chain deposition usually involves the kidney [1]. End stage renal failure (ESRF) occurs in 70% of patients [2]. Outcomes of kidney transplantation are poor, due to recurrent allograft disease or progression of the underlying plasma cell dyscrasia [1,3]. Thus, renal transplant strategies must address the underlying disease. We describe the first reported case of LCDD treated with sequential autologous peripheral blood stem cell (PBSC) transplantation and kidney transplantation.

A 58-year-old male presented with mild anaemia and renal impairment (serum creatinine 2.8 mg/dl). Urinary protein excretion was 0.71 g/day. Serum protein electrophoresis revealed an IgG kappa paraprotein level of 1000 mg/dl, with depressed IgA and IgM. Bone marrow examination showed 5–6% plasma cells. Renal biopsy showed granular tubular protein deposits, thickening of the tubular basement membrane and peri-tubular sclerosis, in keeping with LCDD. Kappa light chain immunoperoxidase stain was positive (Figure 1). The patient was treated with chemotherapy,