Letters and Replies

Microalbuminuria in essential hypertension

Sir,

With respect to the editorial comment 'Microalbuminuria in essential hypertension. A marker of systemic vascular damage?' by R. Pedrinelli [1] two comments appear to be appropriate.

1. The authors state that 'Altered glomerular permeability as a part of a systemic endothelial dysfunction ... could explain ... the appearance of microalbuminuria ...'. While this is an interesting and widely repeated hypothesis it is intriguing if presented in the way Pedrinelli proposes. By convention microalbuminuria may be diagnosed when as little as 20–40 mg of albumin are excreted in a 24-h urinary collection. However, it has been known for some time [2] that even the normal glomerulus 'filters' at least ~1000 mg of albumin per day into the proximal tubular fluid. Most of this albumin is apparently reabsorbed in the proximal tubule by a possibly active mechanism resembling receptor-mediated transport. Based on these data it is not plausible that an additional small amount of no more than 20 mg of albumin, 'filtered by a dysfunctioning' glomerulus—increasing 'filtration' from 1000 to 1020 mg per day—should be detectable in the form of a '20 mg albuminuria', when a normal kidney, filtering ~1000 mg of albumin at the glomerular level excretes next to 0 mg of albumin. Obviously something else must be going on. Since it might be important to better understand these real mechanisms of microalbuminuria, I propose that Dr Pedrinelli and his colleagues might be able to provide a more detailed and more complete explanation of the pathophysiological mechanisms of microalbuminurias.

2. Dr Pedrinelli also addresses 'the missing renal vasodilatation in response to L-arginine ... in contrast to the preserved response to acetylcholine'. Because Pedrinelli goes on to point out that L-arginine is a physiological precursor of nitric oxide he thereby implies that infused L-arginine is somehow converted to NO. He then proposes several hypotheses to put this finding into perspective with other discrepant observations concerning endothelial dysfunction in diabetic nephropathy. Surprisingly, recent work in this area [3,4] is not discussed. This recent work shows that NO-generation in response to L-arginine infusion depends—at least in part—on stimulation of insulin by L-arginine and on NO generation in response to this insulin. Because it is now known that primary 'essential' hypertension often occurs in the setting of altered insulin secretion or response to insulin—also summarized under the catchword of metabolic syndrome—the finding of L-arginine infusion as mentioned above could indeed assume a different meaning from that proposed by Pedrinelli.


Reply

Sir,

Dr Gross states that ' ... it is not plausible that an additional small amount of no more than 20 mg of albumin ... should be detectable in the form of a '20 mg albuminuria' when a normal kidney, filtering approximately 1000 mg of albumin at the glomerular levels excretes next to zero mg of albumin'. On the contrary we find it only logical to assume that, since practically all of the filtered albumin undergoes tubular reabsorption, any even minimal additional amount of albumin leaking from the glomerulus should be retrieved in the urine. Unless one postulates some degree of tubular dysfunction, but the existing evidence is by and large, against this possibility (see for example the Editorial by Erley and Risler, Nephrol Dial Transplant, 1994; 9: 1713–1715).

As regards recent work showing that ' ... NO generation in response to L-arginine infusion depends—at least in part—on stimulation of insulin by L-arginine ... ', Dr Gross is certainly aware that L-Arg is not a circulating hormone but, rather, the biological intracellular precursor of nitric oxide. The work by Giugliani et al. (J Clin Invest 1997; 99: 433–446) may perhaps provide some explanation for the missing renal vasodilatation to systemic L-arginine infusion, we agree on that. However, insulin-stimulation by L-arginine has nothing to do with the vasorelaxing response to regional intra-arterial infusion of acetylcholine, which we mainly dealt with in our Editorial.

Ricercatore Universitario
Confermato
I Clinica Medica
Università di Pisa
Italy

Acute interstitial nephritis due to over-the-counter ibuprofen in a renal transplant recipient

Sir,

The differential diagnosis of acute renal transplant dysfunction includes rejection, pyelonephritis, vascular events, and ureteric obstruction. We report a case of drug-induced acute interstitial nephritis due to proprietary ibuprofen in a transplanted kidney, which illustrates the potential dangers of freely-available medication.

A 34-year-old woman with end-stage chronic renal failure...