Letter and Reply

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Careful re-evaluation of the impact of stopping inhibitors of the renin–angiotensin system in patients with advanced chronic kidney disease

Sir,

We read the article by Ahmed et al. [1] with great interest. This clinical research focused on the impact of stopping inhibitors of the renin–angiotensin system in patients with advanced chronic kidney disease. Their observational data showed that discontinuation of existing long-term angiotensin-converting enzyme inhibitors (ACEi)/angiotensin receptors blockers (ARBs) in advanced chronic kidney disease was beneficial to the estimated glomerular filtration rate (eGFR) for the majority of patients.

Some questions arose:

(1) 1. In this study, the urine protein:creatinine ratio (PCR) after stopping ACEi/ARB was increased in absolute value although this increment did not reach statistical significance (before = 77 ± 20 and after = 121.6 ± 33.6 mg/mmol), even though patients were at end stage renal disease stage. Blood pressure was significantly elevated in spite of alternative antihypertensive agents prescribed. Proteinuria reduction, blood pressure control and kidney function preservation have convincingly been shown [2–4]. In this study, proteinuria increment and blood pressure elevation after stopping ACEi/ARB was observed, contrary to the fact that eGFR improved. What is the reasonable explanation?

(2) 2. Patients were divided into three groups according to eGFR changes after ACEi/ARB were stopped: with worse eGFRs >25%, improved eGFRs >25–50% and stable eGFRs, respectively. We were interested in the value of PCR, blood pressure in the three groups above, as these data were not shown in the manuscript.

(3) 3. The patients included in the study were elderly (mean age 73.3 ± 1.8 years). Loss of lean muscle mass in the elderly will lead to overestimation of eGFR. The article showed examples of the course of selected patients with sustained improvement in eGFR (>25%) up to 54 months after stopping ACEi/ARB. We wonder if muscle mass measurement had been done to rule out influence of muscle mass over this 54-month duration.

(4) 4. In chronic kidney disease with existing long-term ACEi/ARB prescription, accelerated decline of eGFR occurred when factors affecting intra-renal haemodynamics were imposed. Commonly seen factors were renal artery stenosis or diffuse arteriosclerosis, water deprivation due to various causes, consumption of non-steroidal anti-inflammatory drugs, hypertension or hypotension and cardiovascular attacks that lowered renal effective blood supply. Yet, messages in the article regarding exclusion of potential factors decreasing eGFR were inadequate.

As had been stated in the article, prominent among interventions aimed at slowing the progression of chronic kidney disease is the inhibition of the renin–angiotensin–aldosterone system. Stopping long-term existing ACEi/ARB therapy resulted in proteinuria aggravation and blood pressure elevation; therefore, we need to be cautious and carefully interpret the results on the eGFR.

Conflict of interest statement. None declared.

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Reply

Sir,

We appreciate the comments made by Meihua et al. to our pilot study on the discontinuation of ACE inhibitors (ACEi) in advanced stages of chronic kidney disease (CKD).

As the authors clearly mention, the rise in proteinuria post stopping ACEi/ARB did not reach statistical significance. The impact of ACEi/ARB on proteinuria in those who reached end stage renal disease would be minimal.