Elevated concentrations of cardiac troponins are associated with severe coronary artery calcification in asymptomatic haemodialysis patients

Sir,

We read with interest the article by Jung et al. [1] entitled ‘Elevated concentrations of cardiac troponins are associated with severe coronary artery calcification in asymptomatic haemodialysis patients’. They found, in haemodialysis patients, a significant correlation between elevated levels of cardiac troponin T (cTnT) and levels above the detection limit of cardiac troponin I (cTnI), with the severity of coronary arterial calcification (CAC), as discovered by multirow spiral computed tomography. However, the statement that ‘cardiac troponins are commonly elevated in patients with ESRD’ may be true for cTnT, but is not to the same degree applicable to cTnI. In fact, the study of Apple et al. [2] cited by the authors found a much lower frequency of elevated levels of cTnI as compared with cTnT in 733 dialysis patients. Jung et al. [1] reported elevated cTnT levels (>0.1 ng/ml; the cut-off level for myocardial infarction) in 29% of the 38 patients, whereas elevated cTnI-levels (defined as >0.5 ng/ml) were observed in only 8% of the patients (n = 3). Only one patient had a cTnI concentration above the cut-off level for a myocardial infarction (≥2.0 ng/ml). Using the same method of measuring cTnI, we found, in a group of 93 dialysis patients, 9 cases (9.7%) with detectable levels of cTnI (≥0.1 ng/ml), but below 2.0 ng/ml. None of the patients had a cTnI concentration above this level [3]. The formulation of the conclusion by Jung et al. [1] as stated in the Abstract and at the end of the article, that ‘elevated concentrations of cTnT and cTnI were independently associated with…’, is therefore debatable. The positive correlation of cTnI with CAC was observed not only in the three cases of ‘elevated cTnI’ (>0.5 ng/ml), but also with the whole group of 14 patients with detectable cTnI-levels (≥0.1 ng/ml), thus including the cases of cTnI below 0.5 ng/ml (n = 11).

The study confirms that in dialysis patients elevated levels of cTnT and levels above the detection limit of cTnI should, in view of their prognostic significance [2,3], be taken seriously by their treating physicians.

Conflict of interest statement. None declared.

Department of Nephrology and Dialysis Magdi Hussein
Al Hada Armed Forces Hospital
PO Box 1347
Taif
Saudi Arabia
Email: jaapmooy@arab.net.sa

Department of Internal Medicine Hae Hyuk Jung
Kangwon National University Hospital
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doi:10.1093/clinchem/hvf001

doi:10.1093/ndt/gfh849

Reply

Sir,

We thank Hussein and colleagues for their comments regarding our publication. We agree with them; there was a significant association between troponin I and coronary artery calcification, not only in the three patients with troponin I elevated above the cut-off level for the reference range (>0.5 ng/ml), but in the entire group of 14 patients with detectable troponin I (≥0.1 ng/ml), including those with troponin I below the cut-off level. The data for troponin I, compared to troponin T, are thought to be less consistent and are more difficult to interpret, since no standardization between assays using different antibodies exists [1,2]. In addition, the ‘detectable troponin I levels’ can vary with the method used to measure troponin I concentrations. Clearly, larger studies using more sensitive, standardized methods are required to determine the troponin I level of prognostic significance, which is associated with an increased severity of cardiovascular disease, including coronary artery calcification.

Department of Internal Medicine Hae Hyuk Jung
Kangwon National University Hospital
Hyoja-3-dong 17-1
Chunchon 200-093
Republic of Korea
Email: haehyuk@kangwon.ac.kr

doi:10.1093/ndt/gfh850