

*** ARE CARDIAC MARKERS USEFUL IN PATIENTS WITH CHRONIC RENAL FAILURE?**

*Chapelle, J. P.
Department of Clinical Chemistry, University of Liege, Liege, Belgium*

Cardiac troponins are now widely used in the detection of myocardial lesions and provide major advantages as compared to conventional markers such as CK and CK-MB. The clinical value of cardiac troponin I (cTnI) and troponin T (cTnT) in patients with chronic renal failure (CRF) remains however the subject of debate.

Methods: in this study, we determined cTnT, cTnI, total CK, CK-MM activity and CK-MB mass at 3 months - intervals during 9 months in 98 CRF patients treated by hemodialysis. cTnT was measured using a third generation immunoassay and cTnI by two different methods, one of them (Stratus CS) with a detection limit similar to that of cTnT (0.01 ug/L). The patients were subdivided into 2 groups according to the presence or the absence of coronary heart disease (CHD +, n = 47 ; CHD -, n = 51).

Results : in the CHD - group, cTnT was more frequently elevated above cut-off for AMI (up to 23.1 %) than cTnI (no patient) or CK-MB (14.6 %). In the absence of CHD, cTnT increased with age and the patients > 70 years demonstrated average levels close to the cut-off for AMI (0.1 ug/L), nearly three times those in the patients <= 60 years (0.086 + 0.055 vs 0.032 + 0.029 ug/L, p <0.001). cTnI increased with age in parallel to cTnT but, on average, did not exceed the upper reference limit in the oldest patients. In the patients with documented cardiac events (CHD +), we found higher troponin levels than in the CHD - patients of the corresponding age categories, but significant differences between CHD + and CHD - patients were recorded in the patients <= 60 years only (0.114 + 0.130 vs 0.032 + 0.029 ug/L, p <0.005 for cTnT and 0.058 + 0.055 vs 0.019 + 0.018, p <0.005 for cTnI, Stratus CS).

Conclusion : modifications in plasma levels of cardiac troponins are common in hemodialysis patients and advanced age appears to amplify these changes. In practice, these elevations reduce the capacity of cTnT and cTnI to discriminate between CHD - and CHD + in CRF patients over the age of 60 years. In CRF patients < 60 years, the troponins are of clinical interest, but the reference interval and the threshold limits for AMI should be carefully established.