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Diagnostic potential of natriuretic peptides in patients with impaired kidney function

Lena Jafri
Aga Khan University Hospital, Pakistan

Plasma B-type natriuretic peptide (BNP) and N-terminal proBNP (NT-proBNP) are heart failure (HF) markers and also rise in chronic kidney disease (CKD), but the effect of these biomarkers is not fully understood in CKD patients. The aim of this study was to determine BNP and NT-proBNP cutoffs predictable of HF in CKD cohort and compare its concentration in different stages of CKD. Adults with estimated glomerular filtration rate <60 ml/min for ≥3 months were identified in consulting clinics from June 2009 to March 2010. HF was defined as documented by a cardiologist with ejection fraction <40% and assessed by New York Heart Association classification (NYHA). A total of 190 subjects were enrolled in the study, 95 with and 95 without HF. The mean age of patients was 58 (±15) years, 67.4% being males. Mean BNP levels showed a 2.5 fold and 1.5 fold rise from CKD stage 3 to stage 5 in patients with and without HF respectively. NT-proBNP levels in non-HF group were 3 fold higher in CKD stage 5 compared to stage 3. Mean NT-proBNP levels were 4 fold higher in CKD stage 5 compared to stage 3 in patients with HF. Optimal BNP and NT-proBNP cutoffs for HF diagnosis for the entire CKD group were 300 pg/mL and 4502 pg/mL respectively. BNP and NT-proBNP were elevated in patients with impaired kidney function even in the absence of HF and further increased stepwise with NYHA severity. However the magnitude of increase in NT-proBNP was greater than that of BNP.

Biography

Lena Jafri has proven her worth at the Department of Pathology and Microbiology, Aga Khan University Hospital as a young energetic resource. She graduated from Dow Medical College and ascended the ladder of success taking her first step in 2007 as a resident in Chemical Pathology AKUH, arose from the ranks as a Chief Resident, received 'Best Resident Award' and today she has transitioned to a faculty member. Her publications on chronic kidney disease and metabolic bone diseases have been effectively reviewed by her peers and are extremely vital for the developing countries like Pakistan.

lena.jafri@aku.edu