

Determining the Association between Echocardiogram Parameters and Nocturia

There has been a growing recognition that nocturia, a urological symptom, is a sign of cardiovascular disease. Specifically, nocturia has been associated with hypertension and congestive heart failure. Our group found nocturia associated with left ventricular hypertrophy (LVH) and left atrial enlargement (LAE) on 12 lead electrocardiography. While these findings suggest that the presence of nocturia is associated with cardiac structural abnormalities, echocardiography (ECHO) is widely viewed to be more accurate of these findings. Accordingly, the objective of this study was to determine potential associations between nocturia and ECHO abnormalities. Patients were evaluated by a cardiologist during routine office assessment. Nocturia was defined as waking >1 to pass urine during sleep. ECHO studies within 3 months of the clinical encounter were abstracted and evaluated by a blinded reviewer for the presence of LVH, LAE, and LV systolic dysfunction (SD). 38 patients were examined in this pilot study. Patients were predominately African American (97.4%), female (71.1%), and overweight (84.2%). Hypertension was present in 84.2% and diabetes in 52.6% and 47.4% were taking diuretics. 89.5% of subjects experienced nocturia. On univariate analysis, nocturia was associated with a 2.2 (1.5 – 3.2) increased risk of LAE. No significant associations were found between nocturia and either LVH (RR 0.9 CI: 0.6 – 1.4) or SD (RR 1 CI: 0.6 – 1.6). On further analysis, nocturia was also found to be significantly associated with DM (RR 2.5 CI: 1.6 – 3.9). Preliminary results of this study show that nocturia is associated with LAE. These preliminary findings support the notion that nocturia is related to cardiac structural abnormalities, which in turn lead to increased sodium and water retention and volume overload. If validated by this ongoing study, the findings would suggest nocturia to be an important marker of cardiac structural abnormalities.