Correlation between Serum Uric Acid Level and Left Ventricular Mass Index in Newly Diagnosed Hypertension

Phone Zaw Khine

1Defence Services General Hospital, Yangon Myanmar

Background: Left ventricular hypertrophy (LVH) is an independent and powerful risk factor for cardiovascular events and mortality. Serum uric acid (SUA) may induce left ventricular hypertrophy, on one hand, through an inflammatory effect which promotes cardiac hypertrophy and, on the other, through an activation of the renin-angiotensin-aldosterone system which generates hypertrophy and hyperplasia of myocytes and fibrosis of the heart.

Objective: To determine the correlation between serum uric acid level and left ventricular mass index in newly diagnosed hypertension.

Methods: A total of one hundred and sixteen patients (Age ranged 40-80, F 48.3%; M 51.7%) with essential hypertension were evaluated. Each patient underwent a standardized medical history and clinical examination, laboratory tests and echocardiographic assessment with the determination of left ventricular mass index (LVMI).

Results: Mean age of the study population was 51.93 ± 8.03 years. Mean arterial pressure was 117.11 ± 5.813 mmHg for males and 118.63 ± 5.96 mmHg for females, respectively. Mean value of SUA was 5.08 ± 1.67 mg/dl. Mean LVMI was 107.67 ± 20.8 g/m2 for males and 94.75 ± 19.82 for females. A positive significant correlation between SUA and LVMI (P=0.001) was observed.

Conclusion: The study demonstrates that SUA is independently associated with LVMI and suggests that the combination of hyperuricemia with LVH could be a powerful predictor of cardiovascular events.

Keywords: Serum uric Acid, Left Ventricular Hypertrophy, LVH