



**AC093**

**Adult Cardiology & Clinical Cardiovascular Medicine** • Poster Presentation

## **ASSOCIATION BETWEEN CLINICAL HYPERTENSION PHENOTYPES AND LEFT VENTRICULAR GEOMETRIC PATTERNS AMONG NIGERIAN ADULTS**

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**Background:** Although left ventricular (LV) geometric patterns have been widely described among hypertensive populations especially in Nigeria and other parts of sub-Saharan Africa, few studies have evaluated whether clinically defined hypertension phenotypes are independently associated with specific LV geometric patterns.

**Methods:** In this cross-sectional study, 1,716 adults were classified into four hypertension phenotypes: uncomplicated hypertension (HTN), hypertensive with LV hypertrophy (HHD), hypertension with diabetes mellitus (HTN/DM), and hypertension with obesity (HTN/Obesity). Clinical and echocardiographic characteristics were compared using one-way analysis of variance with Games–Howell post hoc tests. Associations between hypertension phenotype and LV geometry were evaluated using the chi-square test and adjusted multinomial logistic regression controlling for age, sex, body mass index, and systolic blood pressure.

**Results:** LV geometry differed significantly across hypertension phenotypes ( $\chi^2 = 167.8$ ,  $P < 0.001$ ). Compared with uncomplicated hypertension, HHD was independently associated with concentric remodelling (adjusted odds ratio [aOR] 1.90, 95% CI 1.38–2.59;  $P < 0.001$ ), concentric hypertrophy (aOR 7.68, 95% CI 5.20–11.34;  $P < 0.001$ ), and eccentric hypertrophy (aOR 4.49, 95% CI 2.17–9.32;  $P < 0.001$ ). HTN/DM independently predicted concentric remodelling (aOR 1.58, 95% CI 1.03–2.42;  $P = 0.037$ ) and concentric hypertrophy (aOR 4.07, 95% CI 2.38–6.97;  $P < 0.001$ ).

**Conclusion:** Clinical hypertension phenotypes are independently associated with LV geometric patterns. Hypertensive heart disease and HTN/DM confer substantially greater odds of adverse LV remodelling than uncomplicated hypertension, supporting phenotype-based risk stratification in hypertensive patients.

**Keywords:** Hypertension phenotype, LV geometry, Nigerians