



AC093

Adult Cardiology & Clinical Cardiovascular Medicine • Poster Presentation

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

Adamu DB1, Onuoha F, Oguno CL, Oligbi EE, Arinze P, Ibrahim EA1, Ajanya OB1, Durotoluwa IM1, Adedokun TA1, Alfa J1, Odili AN1, Ojji DB1 1Cardiology Unit, Department of Internal Medicine, University of Abuja Teaching Hospital, Abuja, Nigeria

Stand: POSTER #AC093 | **Venue:** Poster Exhibition Hall & Gallery - Eko Convention Centre | **Online Ref:** <https://nigeriancardiacsociety.com/abstracts/AC093>

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