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RELATIONSHIP BETWEEN QT INTERVAL AND LEFT VENTRICULAR GEOMETRY IN CHRONIC HEART FAILURE PATIENTS AT LAGOS UNIVERSITY TEACHING HOSPITAL.

O. J. Faboyinde, A. D. Olusegun-Joseph, J. N. Ajuluchukwu, OK Ale, AC Mbakwem, O. Adegoke, C.Amadi, O. Kushimo, A.Okai.

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Background: Heart failure (HF) is associated with structural and electrical cardiac abnormalities, including QT interval prolongation, which increases the risk of ventricular arrhythmias and sudden cardiac death. However, the relationship between QT prolongation and left ventricular (LV) geometry in chronic HF remains unclear.

Methods: This hospital-based cross-sectional study enrolled 141 adults with chronic HF at Lagos University Teaching Hospital. Participants underwent clinical evaluation, 12-lead electrocardiography, transthoracic echocardiography, and laboratory investigations. Associations between QT prolongation and LV geometry were assessed using appropriate statistical analyses.

Results: The mean age was 56.0 ± 12.9 years, and 56.7% were male. QT prolongation occurred in 38.3% of participants. Eccentric LV hypertrophy was the predominant geometric pattern (62.4%). QT prolongation was significantly associated with reduced ejection fraction (p=0.006), hypokalemia (p=0.002), and dilated cardiomyopathy (p=0.001), but not with LV geometry (p=0.791) or LV mass index (p=0.554). Dilated cardiomyopathy (p=0.001) and hypokalemia (p=0.006) independently predicted QT prolongation.

Conclusion: QT prolongation was common in chronic heart failure and was independently associated with dilated cardiomyopathy and hypokalemia, but not with LV geometry, suggesting that electrical abnormalities are driven more by myocardial dysfunction than by structural remodeling. Key: DCM (Dilated cardiomyopathy), LVG (LV geometry).

Keywords: DCM (Dilated cardiomyopathy), LVG (LV geometry), HF (Heart failure)