



AC090

Adult Cardiology & Clinical Cardiovascular Medicine • Poster Presentation

ASSOCIATION BETWEEN NEUTROPHIL–LYMPHOCYTE RATIO, PLATELET-LYMPHOCYTE RATIO, RED CELL DISTRIBUTION WIDTH AND ECHOCARDIOGRAPHICALLY-DERIVED LEFT VENTRICULAR FUNCTIONS IN NIGERIANS WITH HEART FAILURE.

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Stand: POSTER #AC090 | **Venue:** Poster Exhibition Hall & Gallery - Eko Convention Centre | **Online Ref:** <https://nigeriancardiacsociety.com/abstracts/AC090>

Background: Hematological biomarkers such as the neutrophil-to-lymphocyte ratio (NLR), platelet-to-lymphocyte ratio (PLR), and red cell distribution width (RDW) have been linked to left ventricular (LV) dysfunction in chronic heart failure (CHF), but evidence from sub-Saharan Africa is limited. This study evaluated their association with LV systolic and diastolic function in Nigerians with CHF.

Methodology: In this comparative cross-sectional study, 90 patients with CHF and 90 age- and sex-matched healthy controls underwent clinical assessment, transthoracic echocardiography, and automated full blood count analysis to determine NLR, PLR, RDW-coefficient of variation (RDW-CV), and RDW-standard deviation (RDW-SD).

Results: Median NLR was highest in patients with heart failure with reduced ejection fraction (HFrEF) ($p=0.022$), while PLR was lowest in those with preserved ejection fraction (HFpEF) ($p=0.015$). NLR correlated negatively with left ventricular ejection fraction (LVEF) ($r=-0.252$, $p=0.017$). Both RDW-SD and RDW-CV were significantly associated with greater LV systolic dysfunction ($p=0.013$ and $p<0.001$) and correlated negatively with LVEF ($r=-0.434$ and -0.341 , respectively; both $p<0.001$). RDW-SD was also associated with LV diastolic dysfunction ($p=0.020$).

Conclusion: Elevated NLR and RDW, particularly RDW-SD, were associated with worse LV systolic function, while RDW-SD also reflected LV diastolic dysfunction, supporting their potential as simple, inexpensive adjunctive biomarkers for assessing LV dysfunction in Nigerians with CHF.

Keywords: Heart failure, hematological biomarkers, echocardiography, left ventricular function, neutrophil to lymphocyte ratio, platelet to lymphocyte ratio, Red Cell Distribution Width