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Title: CLINICAL PROFILE AND INTRA-HOSPITAL OUTCOMES OF ADULTS ADMITTED WITH HEART FAILURE DUE TO CHRONIC RHEUMATIC VALVULAR HEART DISEASE IN ILORIN, NORTH CENTRAL NIGERIA - AN EIGHT YEAR HOSPITAL REGISTRY

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Background & Aims: In sub-saharan Africa (SSA) chronic Rheumatic valvular heart disease (RVHD) is often associated with a chronic course which causes significant disability, morbidity and loss of productivity. Though originating from infectious aetiology, chronic RVHD is considered a non-communicable disease. The severe valve damage occurring in RVHD, usually leads to chronic heart failure (HF), arrhythmias and thromboembolic phenomena such as stroke. In advanced economies where health systems are better developed RVHD has been largely eradicated with case detection occurring in the early years of life. In SSA where screening systems are less well-established chronic RVHD occurs across a wide age spectrum.

Methods: All Acute Heart Failure (AHF) cases, were recruited into the Ilorin Heart Failure Registry prospectively between April 1, 2015 to March 31, 2023. Diagnosis of AHF was made by Framingham criteria and guidelines of the European Society of Cardiology with echocardiographic confirmation. RVHD was described by established norms- primary affectation of the valves manifesting with any or combinations of the following: presence of thickened and calcified mitral valve leaflets, loss of the classic M-shaped pattern of a normal mitral valve, diastolic doming and restriction of the mitral valve leaflet motions causing poor coaptation of the mitral valve leaflets in systole leading to mitral stenosis or regurgitation, (similar changes in the tricuspid valve); presence of calcified aortic valve, reduction in aortic cusp separation, highly echo reflectant aortic valve leaflets causing aortic stenosis and/or poor coaptation of the aortic cusps in diastole causing aortic regurgitation (or similar changes in the pulmonary valve)

Results: Out of the 614 patients with AHF 35 had chronic RVHD (5.7%). Of the chronic RHVD patients, 60% (21) were female, the mean age was 43.8+ 18.8years, age range 16-80 years. 62.9% of patients were aged <40, 74.8% were employed, none was diabetic, two (5.7%) patients

developed stroke. The pattern of valve affectation was: mitral only 17 cases (48.6%), mitral and aortic 8 cases (22.9%), mitral and tricuspid 4 cases (11.4%), mitral, aortic and tricuspid 3 cases (8.6%), aortic valve only 2 cases (5.7%), pulmonary valve only (2.85%). Majority presented in New York Heart Association class III and IV (95.9%).

The commonest precipitant of AHF was disease progression, 5.5% presented in cardiogenic shock, 44.4% had renal dysfunction (eGFR <60mls/min/1.73m²). The median duration of hospital admission was 21 (Interquartile range 6-21) days and was similar to that of other patients (p=0.34). Compared to all the other AHF patients, percentage intrahospital mortality was 8.6% in chronic RVHD patients vs 11.6% (p=0.602), mean age was 43.8+18.8 vs 59.8+15.6 years (p<0.001). Patients with chronic RVHD had lower serum sodium 131.1+6.1 vs 134.9 + 6.1mmol/L (p=0.018), lower left ventricular dimension in systole 41.2+ 9.9mm vs 48.1+ 11mm (p=0.024), and a higher pulmonary artery systolic pressure (PASP) 73.3+ 19.5mmHg vs 52.5+ 19 mmHg (p=0.007).

Conclusions: RHVD occurs in all age groups in Ilorin, Nigeria which is a typical low resource setting in SSA. Majority of patients presenting in heart failure present in advanced stages. Very few ever had definitive valve repair surgery. Though the patients are significantly younger than other AHF patients, key intra-hospital outcomes are similar. Chronic RVHD patients are a group of AHF patients requiring special attention in Ilorin Nigeria because it affects people in their productive phase of life and it is a potentially reversible cause of AHF.