

**Title:** Echocardiography Effectiveness in Improving Diagnosis of Rheumatic Heart Disease in North Darfur, a hospital Based Study

**Category:** Valvular Heart Disease

### **Abstract**

**Background:** Acute Rheumatic fever (ARF) is an inflammatory disease caused by auto immune responses to bacterial infection. Rheumatic heart disease (RHD) damages one or more heart valves through recurrent episodes of acute rheumatic fever (ARF). This study aims to determine changes in sensitivity, specificity and predictive values in RHD Jone's diagnostic guidelines following inclusion of echocardiograph as an additional diagnostic tool RHD.

**Methods:** This is a retrospective cross-sectional study done in the echocardiography center of AlFashir teaching hospital for a total number of 1103 patients extending from the year 2011-2017. Included RHD patients, ischemic heart disease (IHD) and Congestive Heart Disease (CHD) patients.

**Results:** We found that all the patients who diagnosed as RHD, have shown an increased in value of the sensitivity, positive predictive value and specificity by 18.1%, 8.1%, 1%. respectively after they had screened by echocardiography, in compared to their initial diagnoses by johns criteria alone, based on their clinical presentation. Mitral stenosis (MS) was the commonest RHD abnormality, followed by aortic and tricuspid valve regurgitation. North Darfur state found to be the lowers prevalence of RHD in all geographical part of Sudan been studied. The female to male ratio was 3:1, women, age group above 25 years, mitral stenosis, RHD they all have the highest affected categories between their correspondences groups in north Darfur state.

**Conclusions:** this study is try to highlight the important role of echocardiography in reducing RHD complications through early detection and improving the diagnostic, therapeutic guidelines. As well to calculate the incidence, prevalence and risk factor of RHD in developing countries.