Clinical Outcomes in 3343 Children and Adults with Rheumatic Heart Disease from 14 Low and Middle Income Countries: 2-Year Follow-up of the Global Rheumatic Heart Disease Registry (the REMEDY study).


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Abstract

BACKGROUND:

There are few contemporary data on the mortality and morbidity associated with rheumatic heart disease (RHD) or information on their predictors. We report the two year follow-up of individuals with RHD from 14 low and middle income countries in Africa and Asia.

METHODS:

Between January 2010 and November 2012, we enrolled 3343 patients from 25 centers in 14 countries and followed them for two years to assess mortality, congestive heart failure (CHF), stroke or transient ischemic attack (TIA), recurrent acute rheumatic fever (ARF), and infective endocarditis (IE).

RESULTS:

Vital status at 24 months was known for 2960 (88.5%) patients. Two thirds were female. Although patients were young (median age 28 years, interquartile range 18 to 40), the two year case fatality rate was high (500 deaths, 16.9%). Mortality rate was 116.3/1000 patient-years in the first year and 65.4/1000 patient-years in the second year. Median age at death was 28.7 years. Independent predictors of death were severe valve disease (hazard ratio (HR) 2.36, 95% confidence interval (CI) 1.80-3.11), CHF (HR 2.16, 95% CI 1.70-2.72), New York Heart Association functional class III/IV (HR 1.67, 95% CI 1.32-2.10), atrial fibrillation (AF) (HR 1.40, 95% CI 1.10-1.78) and older age (HR 1.02, 95% CI 1.01-1.02 per year increase) at enrolment. Post-primary education (HR 0.67, 95% CI 0.54-0.85) and female sex (HR 0.65, 95% CI 0.52-0.80) were associated with lower risk of death. 204 (6.9%) had new CHF (incidence, 38.42/1000 patient-years), 46 (1.6%) had a stroke or TIA (8.45/1000 patient-years), 19 (0.6%) had ARF (3.49/1000 patient-years), and 20 (0.7%) had IE (3.65/1000 patient-years). Previous stroke and older age were independent predictors of stroke/TIA or systemic embolism. Patients from low and lower-middle income countries had significantly higher age- and sex-adjusted mortality compared to patients from upper-middle income countries. Valve surgery was significantly more common in upper-middle income than in lower-middle- or low-income countries.

CONCLUSIONS:

Patients with clinical RHD have high mortality and morbidity despite being young; those from low and lower-middle income countries had a poorer prognosis associated with advanced disease and low education. Programs focused on early detection and treatment of clinical RHD are required to improve outcomes.

KEYWORDS:

developing countries; morbidity/mortality; outcomes; rheumatic heart disease; valve