Abstract: P3131

Evolution of subclinical rheumatic heart disease: a multi-centre retrospective cohort study

Authors:
A Sanyahumbi1, G Karthikeyan2, T Aliku3, A Beaton4, J Carapetis5, N Culliford-Semmens6, D Engelman7, J Kado8, G Maguire9, E Okello3, DJ Penny1, M Remond10, CA Sable11, A Steer, N Wilson, 1Baylor College of Medicine / Texas Children's Hospital, Pediatric Cardiology - Houston - United States of America, 2All India Institute of Medical Sciences (AIIMS), Department of Cardiology - New Delhi - India, 3Uganda Heart Institute - Kampala - Uganda, 4Cincinnati Children's Hospital Medical Center, Pediatric Cardiology - Cincinnati - United States of America, 5Telethon Kids Institute - Perth - Australia, 6Starship Children's Hospital, Green Lane Paediatric and Congenital Cardiac Services - Auckland - New Zealand, 7Murdoch Children's Research Institute, Tropical Diseases Research Group - Melbourne - Australia, 8Telethon Kids Institute & College of Medicine Nursing and Health Sciences, Fiji National University - Perth - Australia, 9University of Melbourne, Western Clinical School - Melbourne - Australia, 10University of Technology, Sydney, Faculty of Health - Sydney - Australia, 11Children's National Medical Center, Pediatric Cardiology - Washington - United States of America,

On behalf: Define Study Investigators

Topic(s):
Valvular Heart Disease – Epidemiology, Prognosis, Outcome

Citation:

Background

Screening echocardiography (echo) detects subclinical rheumatic heart disease (RHD) which is categorised as definite or borderline. The natural history of subclinical RHD is not known. Follow up single centre studies have included a relatively small number of participants, and have shown variable progression rates.

Aim

To determine incidence of and factors associated with progression and regression among a cohort of children with baseline subclinical RHD across multiple countries and regions.

Methods

This is a retrospective cohort study of RHD evolution in children with subclinical RHD. Study sites were Australia, Fiji, Malawi, New Zealand, and Uganda. Progression or regression was determined from echos obtained at baseline and most recent follow-up. Factors associated with echo progression or regression were identified using multivariable logistic regression.

Results

482 participants (131 with definite, 351 with borderline subclinical RHD) from 5 countries were included (mean age 11.5 years, range 5-19 years). Mean follow up was 3.4 yrs (range 0.4 – 9.5 yrs). Of 482 participating children, 204(42%) regressed. Among 131 children with definite lesions, 48(37%) regressed to borderline or normal, and 83(63%) remained definite. Among 351 children with borderline lesions, 39(11.1%) progressed, 156(44.4%) remained borderline, and 156(44.4%) regressed to normal. World Heart Federation defines subcategories based on characteristics of affected valves. By subcategory, children with definite C (pathological aortic regurgitation and 2 morphologic characteristics of the aortic valve) and borderline A (at least 2
morphologic features of the mitral valve without pathologic mitral regurgitation or stenosis) were less likely to regress, and borderline A was more likely to progress. In univariable analysis, good adherence (> 80%) to penicillin prophylaxis (BPG) was associated with more regression among all patients (definite + borderline) (OR 1.9, CI 1, 3.5; p = 0.04) but this association did not remain significant after adjustment. With multivariable analysis, borderlines prescribed BPG was the only factor related to progression from borderline to definite (OR 4.1, CI 1.8, 9.3, p <0.01).

Conclusion

This is the largest reported subclinical RHD cohort followed to report outcomes. 42% of definite RHD regressed with subtype C more likely to regress. 11% of borderline RHD progressed. Borderline A was more likely to progress and less likely to regress. We have also identified that being prescribed BPG is associated with borderline progression. This is likely because children with more advanced borderline disease may be more likely to be prescribed BPG. This study highlights that RHD evolution is variable out to 3-4 years post echo detection. While borderline disease is likely, in some cases, to reflect the earliest change of RHD, how this should be monitored and whether it should be treated with BPG should be a priority for future prospective evaluation.