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**Author: Judith Namuyonga**

**Paed Cardiology Fellow**

**Uganda Heart Institute**

**Email: jnamuyonga@gmail.com**

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## **Rheumatic Heart Disease in Children Under five years at the Uganda Heart Institute**

**Judith Namuyonga\* <sup>1,2</sup>, Sulaiman Lubega<sup>1</sup>, Isaac Ssinabulya<sup>1</sup>, Twalib Aliku<sup>1,3</sup>, Emmy Okello<sup>1</sup>, John Omagino <sup>1</sup>, Peter Lwabi<sup>1</sup>**

- 1. Uganda Heart Institute**
- 2. Department of Paediatrics and Child Health, Makerere University College of Health Sciences.**
- 3. Gulu University, Uganda**

### **Introduction;**

Rheumatic heart disease (RHD) is the most serious complication of rheumatic fever that commonly affects children aged 5-15years. RHD appears to have outliers areas with high prevalence. Children under five years are more likely to have severe carditis. Unfortunately primary prevention has been given less attention in this age group.

We therefore set out to describe case series of children under five years with rheumatic heart disease at the Uganda Heart Institute.

### **Methods**

We conducted a retrospective chart review of children aged less than 5 years with a diagnosis of RHD seen at the Uganda Heart Institute from 2010 to 2016. All echocardiograms were reviewed by a paediatric cardiologist using the 2012 World Heart Federation criteria for the echocardiographic diagnosis of RHD.

### **Results:**

RHD was confirmed in 379 children less than 18 years. Seven children (1.8%) were under 5 years. The mean age was 2.5 years, range (2-4.5) years. All children had advanced disease with severe regurgitation of the mitral valve. All children had functional tricuspid valve regurgitation and 85% had moderate to severely elevated pulmonary pressures. None had congenital heart disease. One child had moderate mitral valve stenosis not congenital in aetiology (had no left sided obstructive lesions).

#### **Case 1:**

TO, **2 year** old male 10kg, height 72cm who presented in congestive heart failure, with pedal oedema, moderate pallor, ascites, displaced apex beat and grade3/6 holosystolic murmur at the apex. **Cardiac echo** revealed thickened mitral valve leaflets, especially the anterior mitral leaflet (3.8mm), severe mitral regurgitation (MR) with an eccentric jet, mild tricuspid regurgitation (TR) PG 45mmHg. Unfortunately, he died January 2016, 2 years after diagnosis.

#### **Case 2:**

NB, **4 year** old female 12kg Height 89cm from eastern Uganda presented in overt heart failure, with oedema, tachycardia, and a holosystolic murmur at the apex, oxygen saturation 94%. She had several admissions in 6 months due to congestive heart failure.

Echocardiography revealed, grossly dilated left heart chambers thickened mitral valves with poor coaptation and prolapse of the posterior mitral valve leaflet. Severe MR with an eccentric jet, (jet area 11.cm<sup>3</sup>) moderate TR PG 36mmHg.

**Case 3:** BC, **4 year** old female with hyperactive precordium apical thrill and holosystolic murmur at the apex. Echocardiogram thickened mitral valve leaflets with restricted motion of the posterior mitral leaflet (PML). Severe MR, jet area 4.6cm<sup>2</sup>. Mild TR, PG 52mmHg. She is alive and adherent on treatment.

**Case 4:** NO, **3.5 year** old female 15kg, 108cm height, saturates at 98% on room air. Presented with history of recurrent pneumonia, had an active precordium, displaced apex 6<sup>th</sup> intercostal space, and holosystolic murmur at the apex, loud P<sub>2</sub>. Echocardiogram Mitral valve leaflets are thickened, poor excursion of the PML, mild TR PG 57mmHg.

**Case 5:** NZ, **2 year** female, weight 10 kg, height 102cm, oxygen saturation 96%, echocardiogram; doming of the anterior mitral valve leaflet, moderate mitral stenosis, severe MR. Elevated anti streptolysin O titres (283 IU/ml), raised C reactive protein at time of diagnosis.

**Case 6:** KJ, **2.5 year** old male had thickened mitral valve leaflets, poor excursion of PML, severe MR Vc width 1cm, thick aortic valve, no aortic regurgitation, moderate TR, PG 96mmHg

**Case 7:** AS, **4 year** old female, thickened mitral valve leaflets, tethered PML with poor excursion, severe MR, Moderate TR PG 80mmHg.

#### **Conclusion**

We share unique cases of RHD for children under 5 years who presented with severe disease at the Uganda Heart Institute. Screening programs should not be limited to school going

children or those above 5 years. Studies are recommended to assess the particular strains of group A streptococcus that cause severe RHD disease in these children.