

Thesis abstract for tropEd website

Student: Dr. Antke Zuechner
Profession: MD, Paediatrician, Paediatric Cardiologist
Title: Pattern of Congenital Heart Disease in Children presented to a Tertiary Paediatric Echocardiography Clinic in the Lake Zone of Tanzania
Year: 2013
Key words: congenital heart disease, echocardiography, Tanzania
Home: Institute of Tropical Medicine and International Health (ITMIH), Charite Universitätsmedizin Berlin
Supervisor: Dr. Mwita Wambura, PhD Epidemiology, National Institute for Medical Research, Mwanza, Tanzania

Background: Congenital heart disease (CHD) is the most common congenital malformation in children and includes a variety of malformations of the heart or its major vessels. It is among the leading causes of morbidity and mortality during infancy and childhood. The incidence of CHD is estimated to be constant worldwide with a rate of 8-10 / 1000 live births, but data on spectrum and prevalence of CHD is rare for most African countries including Tanzania.

Objective: To provide knowledge about the relative frequencies, pattern and stage of CHD at time of initial diagnosis in children in the Lake Zone of Tanzania as presented to a Paediatric Echocardiography Clinic.

Methods: A cross-sectional hospital-based study was performed to describe the pattern of CHD diagnosed at the paediatric echocardiography clinic of Bugando Medical Centre (BMC) in Mwanza, Northwestern Tanzania.

Findings: One hundred and twenty-one children aged up to 12 years were enrolled into this study. Ventricular septal defect (VSD) was the leading diagnosis with 20.7% of cases followed by Tetralogy of Fallot (16.5%) and atrioventricular septal defect (AVSD) (15.7%). Only 4 patients (3.3%) were diagnosed within the first month of life, in the majority of cases (52.9%) diagnosis was reached between the second and twelfth month of life. Mean age at diagnosis was 20 months with standard deviation of 25 months and median age 9 months with interquartile range of 23 months. No association was found between socio-economic factors such as place of delivery, distance to referral centre, education of the mother and the age at diagnosis. Twenty-

eight children (23.1%) showed associated extra cardiac abnormalities with Down syndrome being the leading syndrome in twenty-two cases (78.6%). Anaemia was a frequent complication in children with acyanotic heart disease and malnutrition in form of wasting and underweight affected more than 60% of all patients. Twenty children (16.5%) presented with severe cyanosis ($\text{SaO}_2 \leq 80\%$) and eleven children (9.1%) showed signs of severe pulmonary hypertension.

Conclusions: Many children diagnosed with CHD presented late with a high rate of complications. For several patients the possible time window for corrective surgery was already missed.

Most likely, only a small proportion of children with CHD in our study area were diagnosed given the estimates for the incidence of CHD based on annual birth rate. A strategy for early detection of children with CHD needs to be developed to facilitate the installation of a successful program for paediatric heart surgery. Community based studies on the prevalence of CHD would give evidence about the real burden of CHD in Tanzania.