

Rheumatic Heart Disease in the Developing World

Although the latter part of the last century saw a dramatic decline in the incidence of rheumatic heart disease (RHD) in the developed world, Sheryar A. Sheikh, MD, Punjab Institute of Cardiology, Lahore, Pakistan, reminded the audience that it remains a major cause of cardiovascular morbidity and mortality in developing countries. Worldwide, more than 15 million individuals have RHD. In the developing world, each year ~470,000 new cases are diagnosed, more than 200,000 people die, and about 3 million people require hospitalization due to chronic heart failure that is associated with RHD. Socioeconomic gradient remains the most important barrier among these countries or within a developing country with regard to both susceptibility to RHD and availability of cardiovascular care.

Bongani M. Mayosi, MD, University of Cape Town, Cape Town, South Africa, noted that the prevalence of RHD is probably understated. Many of the RHD studies, which are based on school-aged children, show that the incidence of rheumatic fever (RF) peaks between the ages of 10 and 15 years; however, prevalence of RHD peaks about a decade later [Carapetis JR et al. *Lancet* 2005]. Marijon and colleagues also have shown that in the absence of echocardiography, the prevalence of RHD is underestimated by as much as 10% [Marijon E et al. *N Engl J Med* 2007].

Dr. Mayosi stated that we need to apply what we already know if we are to make advances against RHD. In particular, he noted the results of a meta-analysis of trials that compared the effectiveness of antibiotics versus no antibiotics for the prevention of RF in patients who presented with a sore throat, with or without confirmation of group A streptococcus infection, and with no history of RF. The authors concluded that antibiotic treatment that is given to cases of *suspected* streptococcal pharyngitis is an effective and safe option for reducing the complication of acute RF [Robertson KA et al. *BMC Cardiovasc Disor* 2005]. Reductions were as high as 80%. Similar strategies have proven to be effective in Costa Rica and Cuba [Parry E et al. *Principle of Medicine in Africa*, 3rd ed. 2004], where the incidence of RF has declined in proportion to the use of penicillin.

Dr. Mayosi believes that secondary prevention is too late in developing countries, because patients in these countries do not present with RF. In sub-Saharan Africa, for example, where heart failure primarily is a disease of the young and middle-aged, RHD is responsible for 22% of all heart failure cases [Mayosi *BM Heart* 2007].

“This is one of the few problems in cardiology that can we solve in our lifetime,” he said. Emphasis needs to be put on both primary and secondary prevention. Primary prevention is particularly important in areas that do not have good health care systems.

Zohair Al Halees, MD, King Faisal Specialist Hospital & Research Centre, Riyadh, Saudi Arabia, discussed his research on a prototype vaccine to prevent group A streptococcal infection, which was developed at Queensland Institute for Medical Research in Australia. The J8DT vaccine has been successfully tested in mice. Dr. Halees’s group tested the safety and efficacy of the prototype vaccine in a baboon model using incremental doses.

Initial results showed no systemic or cardiac toxicity from the vaccine, indicating safety. There was some modification of the symptomatology, indicating that it may offer a degree of protection, particularly with the use of a higher dose. The next step is to concentrate on testing the higher dose of vaccine in a larger group of baboons.

In closing, Dr. Halees stated that research needs to continue on the development of a vaccine, which will be the only way that RHD will be eradicated in the future.

Highlights from the
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