

Echocardiography detecting many more cases of definite and borderline rheumatic heart disease

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How using echocardiography is increasing detection rates of rheumatic heart disease (RHD) many-fold is the subject of one of the papers in the RHD special issue of *Global Heart*, the journal of the World Heart Federation, and written by Dr Anita Saxena, All India Institute of Medical Sciences, New Delhi, India; Dr Liesl Zühlke, University of Cape Town and Red Cross War Memorial Children's Hospital, Cape Town, South Africa; and Dr Nigel Wilson, Starship Hospital, Auckland, New Zealand.

In 2012, the World Heart Federation introduced new guidelines for diagnosis of RHD using [echocardiography](#), providing clear definitions that raised the bar for definite cases of RHD, and also borderline cases of RHD (that were showing echocardiographic abnormalities but as yet no clinical symptoms of disease), as compared with the previous WHO criteria issued in 2004.

The paper presents data from New Zealand, India, and Africa, all showing that using echocardiography increases detection rates of both definite RHD cases and borderline cases (abnormal [echocardiograms](#) without clinical symptoms).

In New Zealand, the WHF Criteria found a 10 per 1000 definite RHD case rate in schoolchildren aged 10-13 years, and a 24 per 1000 borderline rate. Echocardiographic screening has been used in New

Zealand since 2008.

In India, in a study of 6270 children aged 5-15 years, using WHO criteria, 20 cases per 1000 (including definite and borderline cases) were detected using echocardiography, compared with clinical detection rates of just 1 case per 1000. Being older or female almost doubled the risk of RHD, and being in a government funded school rather than private (a measure of poverty) increased risk by 55%. Similar increased detection rates with echocardiography were found in Africa, with one study in Mozambique examining 2,170 children mean age 11 years finding a prevalence of echocardiographic RHD was 30.4 per 1,000 children compared with 2.3 per 1,000 diagnosed clinically.

The authors discuss the problems, both ethically and financially, with how to deal with borderline cases in terms of secondary prophylaxis, as there is not enough information on the natural course of the disease to assess whether beginning secondary prophylaxis with benzathine penicillin G (BPG) injections will prevent [disease progression](#). At the moment, in India and New Zealand, borderline cases are not being given BPG, but are instead undergoing active surveillance to check for signs of disease progression. A prospective, international, multicenter registry of definite and borderline RHD (known as the DefineRHD registry) is being implemented. Follow-up of secondary penicillin status with frequent reporting (3-monthly) and echocardiography changes (2-yearly) should answer the question whether those with definite RHD receiving good secondary prophylaxis will show less disease progression and more disease regression than will those with no or poor secondary prophylaxis.

And, as the authors point out, "The acceptability of long-term secondary prophylaxis for those with echocardiographically detected RHD has not been established or researched. In most regions, children with an episode of acute rheumatic fever are admitted to hospital with the acute illness, often with painful arthritis. This allows families to understand well and

accept, usually, the importance of secondary prophylaxis. In contrast, the logic for secondary prophylaxis may not be understood by the family of an otherwise healthy child who is found to have echocardiographic RHD."

The authors conclude: "Portable echocardiography is a relatively new screening tool for RHD, which has raised awareness of the high prevalence of RHD in many countries...The natural history of subclinical echocardiographically detected RHD is the most important research question to be answered before more widespread screening is endorsed."

Provided by World Heart Federation

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