

## Rheumatic heart disease screening in resource limited settings: is hand held device the answer?

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Submitted Jul 10, 2015. Accepted for publication Jul 10, 2015.

doi: 10.3978/j.issn.2224-4336.2015.07.03

View this article at: <http://dx.doi.org/10.3978/j.issn.2224-4336.2015.07.03>

I would like to thank Drs. Godown and Beaton for their letter in response to the recent editorial published in this journal (1). I entirely agree with their view that early diagnosis of rheumatic heart disease (RHD) provides the opportunity for initiating secondary prophylaxis. It is also established that progression of valvular damage can be arrested by effective secondary prophylaxis, as it prevents recurrent streptococcal infections. The moot question is how we effectively identify patients with RHD, early. This question assumes further importance in resource poor settings where the burden of RHD is likely to be high. Auscultation has been shown to be ineffective due to its poor sensitivity and specificity for mild or very mild cases of RHD. A number of studies published in the last decade have established the role of echocardiography in early RHD diagnosis. Data from all these studies has shown a much higher prevalence of RHD than the clinical estimates, based on auscultation. There was no uniformity in diagnostic criteria in many of these studies, making their interpretation difficult. To avoid this, World Heart Federation came up with specific criteria for diagnosing definite and borderline RHD by echo-Doppler. These criteria were developed for conventional and portable echocardiographic equipment.

Screening echocardiography for RHD diagnosis is very resource intensive as it entails expensive equipment and trained health professionals. In most of the initial studies, cardiologists have personally performed or reviewed all echo-Doppler studies. This arrangement is not cost effective, especially in settings where RHD is common. Realizing this, some of the studies published later have explored the possibility of nurse led RHD screening programs using more simplified echo protocols (2,3). The

other way to reduce cost of screening is to use a pocket sized, hand held echocardiography instrument. Godown and colleagues have used this equipment for school children in Uganda and found it superior to auscultation (4). It appears to be a cost effective strategy for screening. However, the question is whether we should accept missing borderline RHD in as many as 30% of cases. It is very likely that some of these missed cases may progress to develop significant valvular lesion before RHD is diagnosed in them. This would tantamount to losing the window of opportunity for early diagnosis.

However, in real world where RHD continues to devastate, where the state of health care may be dismal, some care should be considered better than no care. In resource poor regions where it is almost impossible to establish optimal screening for RHD, this ultraportable, hand held echocardiography machine offers some relief. Most of definite RHD cases, not recognizable clinically, are likely to be diagnosed with this strategy. I believe that mitral stenosis should not be difficult to diagnose using a hand held machine, even though it does not have continuous wave Doppler. The mitral valve shows typical morphological features with thickening and restriction of motion of both leaflets. I agree with Drs. Godown and Beaton that for optimal use of hand held device in resource limited settings, highly sensitive and specific echo criteria need to be developed. Those with suspicion of RHD should get evaluated by experienced staff at a more advanced centre equipped with better echo machine.

As far as the role of secondary prophylaxis in subclinical RHD is concerned, I am sure we will soon have some answers as several ongoing studies are addressing this question.

## Acknowledgements

None.

## Footnote

*Conflicts of Interest:* The author has no conflicts of interest to declare.

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**Cite this article as:** Saxena A. Rheumatic heart disease screening in resource limited settings: is hand held device the answer? *Transl Pediatr* 2015;4(3):256-257. doi: 10.3978/j.issn.2224-4336.2015.07.03