



Revised Jones Criteria For The Diagnosis of Acute Rheumatic Fever (AHA 2015) - An Indian Perspective

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Acute Rheumatic Fever (ARF) is still a major problem in some developing and low middle income countries though the incidence and prevalence has remarkably reduced in North America and Europe. Ever since T. Duckett Jones in 1944 proposed the Jones criteria, it was modified and later revised by the American Heart Association (AHA) in 1992. This was reconfirmed in an AHA sponsored Workshop in 2002 [1]. No modification or change was suggested after the introduction of Doppler Echocardiography (DE) for the diagnosis of clinical and "subclinical carditis". When a clinical diagnosis by the clinician fails to show evidence of carditis, DE may pick up cases of "subclinical carditis". Moreover, previous recommendations did not include the Classification of Recommendations (Class I, II a, II b, and III) and Levels of Evidence (Levels A, B and C). Recently, however, a scientific statement from the American Heart Association (AHA) has published an update to the Jones criteria including the use of DE in the diagnosis of ARF [2].

The pattern of disease also is different among different populations. In the low and middle income countries and low socioeconomic groups where prevalence is high, the disease occurs throughout the year with no obvious outbreaks of epidemic proportions whereas in the high socioeconomic groups, the incidence is low but outbreaks may occur at intervals. Low risk has been defined as having an ARF incidence of less than 1 per 1000 population per year [2].

The major criteria for the diagnosis of ARF remain the same namely, carditis, polyarthritides, chorea, subcutaneous nodules and erythema marginatum. But in highly susceptible populations, aseptic monoarthritides, polyarthralgia and low grade fever should be factored in while making the diagnosis [3]. Carditis, being the commonest major criteria (50-60%), is often a pancarditis but mainly presents clinically as a valvulitis. Subclinical carditis is diagnosed when the classical clinical auscultatory signs are not seen but DE shows evidence of mitral or aortic valvulitis. This is a new development and more than 25 studies are available to substantiate this. A review of 23 articles showed the prevalence of subclinical carditis from 0 - 53% emphasizing the high variability of the finding. Pooled evidence puts the prevalence of subclinical carditis at 16.8% of ARF. So much so, the Indian Working group has recommended DE to be done in all confirmed cases of ARF without clinical evidence of carditis [4].

The DE findings in pathological mitral regurgitation are that it should be seen in at least two views,

the jet length of 2 cm or more, in at least one view, a peak velocity of more than 3 m/s and a pansystolic jet in at least one envelope. Those for pathological aortic regurgitation are to be seen in at least two views, a jet length of 1 cm or more in at least one view, a peak velocity of more 3 m/s and a pan diastolic jet in at least one view [5]. Concurring with the recent studies the AHA has suggested the "*Echocardiogram with Doppler should be performed in all cases of confirmed and suspected ARF (Class. I Level of Evidence B)*". It also recommends that "*It is reasonable to consider performing echocardiogram/Doppler studies in any patient with diagnosed or suspected ARF even if documented carditis is not present on diagnosis (Class II a, Level of Evidence C)*" [2].

Coming to arthritis, in addition to the classical migratory polyarthritis, aseptic monoarthritis may be an important clinical presentation as reported from India, Australia and Fiji [3, 6, 7, 8]. As high as 16-18% of confirmed cases of ARF reported from Australia present as monoarthritis. Hence the AHA has recommended that "*At present, consideration that monoarthritis may be a part of ARF spectrum should be limited to patients from moderate to high risk populations (class I Level of evidence C)*". The writing group also recommends that "*Inclusion of polyarthralgia as a major manifestation is applicable only for moderate or high incidence populations and only after careful consideration and exclusion of other causes of arthralgia such as autoimmune, viral or reactive arthropathies (Class II b, Level of Evidence C)*" [2].

Whereas the recommendations on chorea and skin manifestations are not changed, and ESR of more than 60 mm/hour and a C-reactive protein (CRP) of more than 3.0 mg/dL are considered typical of ARF. The evidence for a preceding streptococcal infection also remains unchanged from the previous recommendations [2]. The criteria for Rheumatic fever recurrences also remain the same. The recommendations also add that the addition of monoarthritis and subclinical carditis as major manifestations and low grade fever more 37.5 degrees Centigrad) as a minor criterion with the increased sensitivity when considered in high risk populations.

With respect to India, there have been reports that the incidence and prevalence studies have reported a decline in incidence of ARF and a decrease in prevalence of Rheumatic Heart disease (RHD). The introduction of echocardiography / Doppler and its easy availability in many urban and many rural settings adds a different angle to the diagnosis of ARF and RHD in India [9]. A working group of the Indian Academy of Pediatrics brought out guidelines for the diagnosis and treatment of ARF and RHD in 2008 in which, subclinical carditis and its diagnosis by echocardiography/Doppler has received a passing mention but no criteria for the diagnosis have been elaborated. Also they added that echocardiography /Doppler is not mandatory but needs to be done to establish clinical carditis [10].

Hence in conclusion, accepting the revision of AHA in 2015, it is time that Pediatricians and Cardiologists in India woke up to formulate their own guidelines for the diagnosis of ARF adding Echocardiography and Doppler to the armamentarium of tests in the diagnosis of ARF.

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