

Assessing the impact of the revision of the Taskforce Criteria for the diagnosis of Arrhythmogenic Right Ventricular Cardiomyopathy (ARVC)

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Background: Arrhythmogenic right ventricular cardiomyopathy (ARVC) is a genetically determined cardiomyopathy associated with ventricular arrhythmia and sudden cardiac death. In 2010 the criteria used to diagnose the condition were revised. The aim of this study was to investigate the impact of the 2010 revisions on the prevalence of ARVC criteria determined by cardiac magnetic resonance (CMR) imaging in a consecutive series of patients with a clinical suspicion for ARVC.

Methods: We retrospectively analysed the CMR scans of all patients referred with a clinical suspicion of ARVC between 2011 and 2013 at a single regional centre. Presence or absence of major and minor CMR task force criteria (TFC) was determined using both the original and the revised criteria. Patient records were also reviewed to determine the prevalence of non-imaging criteria.

Results: 401 consecutive patients were included (mean age 41.2 ± 16.8 yrs, 55% male).

216 patients (53.9%) satisfied at least one non-imaging criterion for a diagnosis of ARVC.

Utilising the original criteria, 16 patients (3.9%) satisfied major CMR criteria compared with 12 patients (3%) with the revised criteria ($p=0.42$). Of the 16 patients initially classified as having major CMR criteria in the original guidelines 4 (25%) did not fulfil any of the revised TFC.

Using the original criteria, 115 patients (28.7%) satisfied minor CMR criteria compared with 18 patients (4.5%) with the revised TFC ($p<0.001$); 97 patients (84.3%) with minor original TFC did not have any of the revised TFC. This discrepancy was primarily due to the exclusion of regional wall motion abnormalities in the absence RV dilatation as a criterion, in the revised TFC.

Application of the revised CMR TFC significantly improved the positive predictive value for combined CMR major and minor criteria in diagnosing ARVC from 8.4% to 40%, calculated based upon the patients final diagnosis using the full TFC. Despite this improvement in specificity, CMR's sensitivity for the diagnosis of ARVC was not significantly reduced (70.6% vs. 84.1%).

Conclusion: CMR plays an important diagnostic role in the evaluation of patients with possible ARVC.

The revision of the ARVC task force imaging criteria has improved CMR's accuracy in the diagnosis of the condition.

