

Two common echocardiographic variables to diagnose cardiac amyloidosis: the AMYloidosis Index (AMYLI) score

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Background: Early diagnosis of cardiac amyloidosis (CA) is warranted to initiate specific treatment and improve outcome. The amyloid light chain (AL) and inferior wall thickness (IWT) scores have been proposed to assess patients referred by hematologists or with unexplained left ventricular (LV) hypertrophy, respectively. These scores are composed of 4 or 5 variables, respectively, including strain data, and no decisional cut-offs were introduced.

Methods: Based on 2 variables common to the AL and IWT scores, we defined a simple score named AMYloidosis Index (AMYLI) as the product of relative wall thickness (RWT) and E/e' ratio, and assessed its diagnostic performance. Optimal rule-out cut-offs were searched as those with negative likelihood ratio (LR-) <0.1.

Results: In the derivation cohort (n=251), CA was ultimately diagnosed in 111 patients (44%). The 2.22 score value was selected as rule-out cut-off

(LR- 0.0). In the hematology subset, AL CA was finally diagnosed in 32 patients (48%), with 2.36 as rule-out cut-off (LR- 0.0). In the hypertrophy subset, ATTR CA was diagnosed in 79 patients (43%), with 2.22 as best rule-out cut-off (LR- 0.0). In the validation cohort (n=691), where more patients were diagnosed with CA (94% and 68% in the hematology and in the hypertrophy subsets, respectively), the 2.22 rule-out cut-off had a LR- = ∞ (as no patient scoring <2.22 had CA). In the hematology and hypertrophy subsets, the 2.36 and 2.22 cut-offs were effective for ruling-out CA, with both LR- = ∞ (as no patient scoring <2.36 or 2.22, respectively, had CA). **Conclusions:** The AMYLI score (RWT* E/e') is simpler than those proposed and similarly accurate. A 2.22 cut-off value excludes CA diagnosis in patients undergoing a diagnostic screening for CA, while a <2.36 and a <2.22 value may be better considered in the subsets with either blood dyscrasia or unexplained hypertrophy, respectively.

