The HFA PEFF diagnostic algorithm poorly correlates with invasive LV filling pressure in HF PEF

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Background: Heart failure with preserved ejection fraction (HFPEF) patients typically have elevated LV filling pressures, whether at rest and/or on exercise. In 2020, the HFA-ESC proposed a process to detect HFPEF called HFA–PEFF diagnostic algorithm, which has not been validated against invasive right heart catheterization (RHC).

Purpose: The purpose of this work was to compare this algorithm against LV filling pressures invasively calculated.

Methods: PH-HF registry enrolled 663 patients with HF from which 276 had preserved ejection fraction with and without pulmonary hypertension explored at 11 French centres between 2011 and 2021. Patients meeting the 2021 ESC definition of heart failure underwent both RHC at steady state under optimal medical therapy and a complete ultrasound study within 24 hours. From 4 domains, the HFA-PEFF score was calculated with the use of major and minor criteria. A score ≥5 points is considered to be diagnostic, while between 2-4, further investigations are requested. The score was compared to pulmonary wedge pressure.

Results: Mean age was 69.5±12.4 years, 35.1% male, mean left ventricular ejection fraction was 62.5±7.2%. Wedge pressure was 20.5±7.5 mm Hg and HFA-PEFF score averaged 4.9±1.2 with 181 patients (66%) above 5. Sensitivity and specificity were 68% and 46%, respectively. The figure 1 demonstrates the misclassification of patients, particularly those with high HFA-PEFF score but normal left ventricular filling pressure (lower right), that are badly categorized.

Conclusions: The HFA-PEFF score poorly correlates with invasive measurement of LV filling pressure. Patients with high score may require more careful attention as they are often misclassified.

Figure 1