Abstract: P6492

Quantitative definition of severe functional mitral regurgitation – A matter of intercontinental debate

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Topic(s):
Valvular Heart Disease – Epidemiology, Prognosis, Outcome

Citation:
Background. Recent divergence between AHA/ACC and ESC/EACTS guidelines of the quantitative definition for severe functional mitral regurgitation (sFMR) introduced uncertainty, inconsistency and continuing debate. The relation of each threshold with long-term outcome, in patients under guideline directed therapy (GDT) remains however uncertain.

Methods. We enrolled 269 heart failure patients with reduced ejection fraction (HFrEF) and graded sFMR according to both guideline-recommendations[AHA/ACC: effective regurgitant orifice area (EROA)=40mm2 or regurgitant volume (RegVol)=60ml/beat and ESC/EACTS: EROA=20mm2 or RegVol=30ml/beat]. All-cause mortality was defined as the primary endpoint.

Result. According to AHA/ACC guidelines sFMR occurred in 17% by EROA with a median EROA of 0.5mm2 (IQR 0.4-0.6) and in 13% by RegVol with a median RegVol of 76ml/beat (IQR 69-101). According to ESC/EACTS guidelines sFMR occurred in 53% by EROA with a median EROA of 0.4mm2 (IQR 0.2-0.4) and 40% according to RegVol with a median RegVol of 51ml/beat (IQR 37-69). During 8-years follow-up, 165 patients died. We observed a significant association with outcome for sFMR according to AHA/ACC guidelines quantified by EROA (HR 1.66, 95%CI 1.13-2.43, P=0.009; Figure 1A) as well as RegVol (HR 2.02, 95%CI 1.34-3.05, P=0.001; Figure 1A). In contrast, the ESC/EACTS definition of sFMR was related with outcome exclusively if quantified by RegVol (HR 1.46, 95%CI 1.05-2.05, P=0.026; Figure 1B) but not for EROA (HR 1.30, 95%CI 0.91-1.86, P=0.15; Figure 1B).

Conclusion. In this contemporary HFrEF cohort under GDT there is significant association of the ACC/AHA proposed cut-off for severe FMR and long-term mortality. The ESC/EACTS definitions are associated with mortality exclusively for the RegVol. The lack of association between sFMR based on ESC/EACTS EROA cut-offs with mortality potentially results from incorporating patients where the regurgitant burden may still be compensated and has not yet become a driving force of disease progression. Contemporary definition of sFMR entails decision making for surgical/transcatheter repair. Cut-offs need to account for the competing risks of the procedure versus the potential benefit of reducing mortality. Lower thresholds may expose a significant proportion of patients to unnecessary risk of futile procedures and higher thresholds may withhold potentially life-extending therapies. The disagreement between the two guidelines does not only convey a source of uncertainty for treating physicians but also lead to inconsistent treatment allocation thereby hindering comprehensive and comparable research. Future studies need to approximate to the true nature of severe functional mitral valve disease in an attempt to facilitate a unifying definition of sFMR.
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