



REFINING THE CLASSIFICATION OF SEVERE, SYMPTOMATIC AORTIC STENOSIS USING FLOW AND GRADIENT MEASUREMENTS TO PREDICT OUTCOMES POST-TRANSCATHETER AORTIC VALVE REPLACEMENT

Poster Contributions
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Background: Current ACC Guidelines distinguish three groups of severe, symptomatic aortic stenosis (AS) patients based on gradient and ejection fraction (EF). Stroke volume index (SVI) may help define outcomes following TAVR.

Methods: We retrospectively analyzed clinical and echo data of 840 symptomatic, severe AS patients who underwent TAVR. Four groups were defined according to flow (SVI $<$ or ≥ 35 ml/m²) and mean gradient ($<$ or ≥ 40 mmHg) as follows: 1) Normal-Flow, High Gradient (NF/HG); 2) Normal-Flow, Low-Gradient (NF/LG); 3) Low-Flow, High-Gradient (LF/HG); and 4) Low-Flow, Low-Gradient (LF/LG). Patients were further divided into normal EF ($\geq 50\%$) and low EF ($< 50\%$) groups. The primary end point was overall mortality at 1yr.

Results: Compared to NF/HG (Figure 1A) there was no difference in outcomes with LF/HG ($p=0.41$) but there was higher mortality for NF/LG (HR=1.6, CI [1.047, 2.45], $p=0.029$) and LF/LG (HR=2.25, CI [1.56, 3.64], $p<0.001$). NF/LG had better outcomes than LF/LG ($p=0.036$). In the normal EF group, only LF/LG patients had worse outcomes compared to NF/HG patients (HR= 2.19, CI [1.18, 4.07], $p=0.013$). In the low EF group (Figure 1B) both NF/LG (HR= 2.66 CI [1.30, 5.43], $p=0.007$) and LF/LG (HR= 2.51, CI [1.26, 5.01], $p=0.009$) had worse outcomes.

Conclusions: Following TAVR, LF/LG patients have a worse outcome compared to other flow/gradient groups irrespective of EF. The NF/LG cohort which is not included in the current guidelines, may be a high risk group particularly in the setting of low EF.

Figure 1: KM curves comparing one year outcomes by flow/gradients groups

