

TCT-706
Can Clinical Predictive Models Identify Patients Who Should Not Receive TAVR?



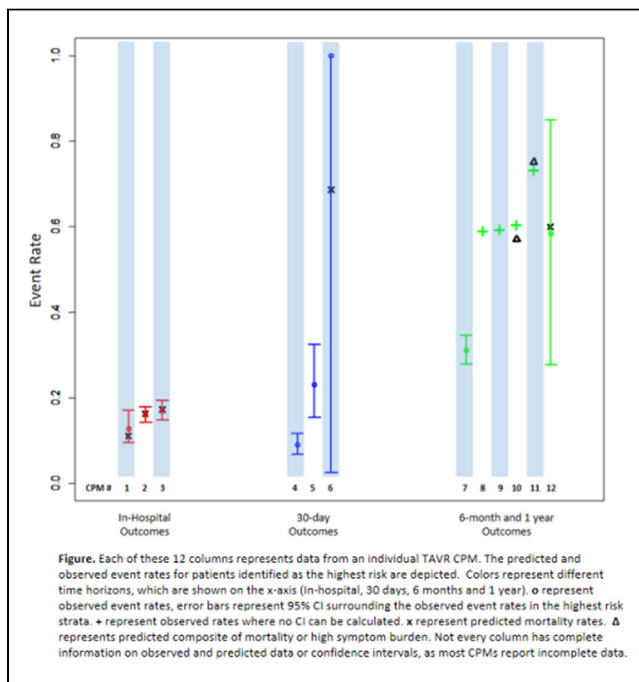
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BACKGROUND Transcatheter aortic valve replacement (TAVR) is routinely offered to patients with very high predicted risk. Although most patients benefit from TAVR, a significant minority have persistent symptoms or die within 1 year of treatment. There is interest in identifying patients for whom this procedure is futile and should not be offered.

METHODS We conducted a systematic review to identify TAVR clinical predictive models (CPMs) published through October 31, 2018, using the Tufts Predictive Analytics and Comparative Effectiveness CPM Registry (<http://www.pace.tuftsmedicalcenter.org/cpm>). For each TAVR CPM we extracted information on predicted and observed outcome rates for the highest reported stratum of risk. The 95% confidence interval for observed event rates was calculated using the exact binomial method. We compared the highest reported event rates with an often-cited quantitative definition of futility.

RESULTS Sixteen TAVR CPMs representing 62,852 treated patients were published from 2013 to 2018. These CPMs predict mortality (n = 13) or the composite outcome of mortality or high symptom burden (n = 3). The highest predicted rates ranged from 11.0% for in-hospital mortality to 75.1% for the composite of mortality or high symptom burden 1 year after TAVR. Statistical confidence was lowest for the highest observed event rates (Figure). No high-risk TAVR group had an appropriate event rate and adequate statistical power to meet a quantitative definition of futility.



CONCLUSION In the case of TAVR, currently available CPMs have insufficient statistical power to identify patients for whom TAVR is futile.

CATEGORIES STRUCTURAL: Valvular Disease: Aortic