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## RISK STRATIFICATION IN SEVERE AORTIC STENOSIS: THE IMPORTANCE OF VENTRICULO-ARTERIAL INTERPLAY

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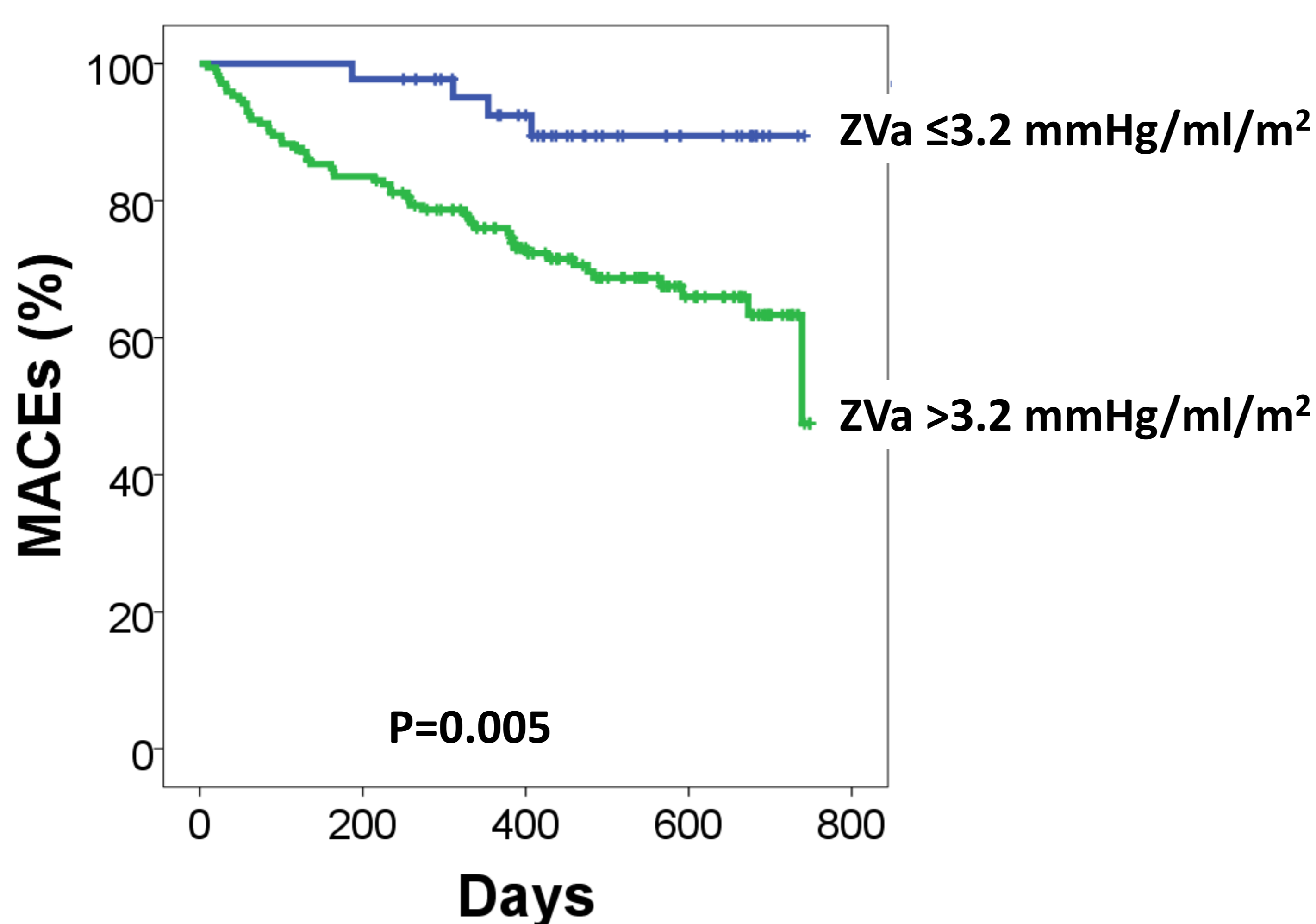
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**Introduction:** in patients with aortic stenosis (AS), the occurrence of adverse outcomes does not always correspond to the classical markers of hemodynamic severity. Moreover, the evaluation of outcomes in these patients is often biased by considering surgery as a censor event at follow-up.

**Aim of the study** is therefore to evaluate the determinants of prognosis in patients with severe AS, independently from the treatment modality (aortic valve replacement/medical therapy).

**Methods:** 220 patients (mean age:  $79.8 \pm 8.6$  years, males: 54%) with severe AS (aortic surface  $< 1 \text{ cm}^2$  or  $< 0.6 \text{ cm}^2/\text{m}^2$ ) underwent standard echocardiography to characterize aortic valve gradients and biventricular function. Hospitalization for cardiac cause, heart failure, overall death, but not intervention on the aortic valve were considered as major adverse cardiac events (MACEs) determining prognosis.

**Results:** after a mean follow-up period of 7.8 months, the predefined MACEs occurred in 57 patients (26%). At multivariable Cox regression analysis, LVESV (HR 1.20,  $p=0.0025$ ), age (HR 0.79,  $p=0.03$ ), female sex (HR 1.43,  $P=0.05$ ) and a  $ZVa > 3.2 \text{ mmHg/ml/m}^2$  (HR 3.53,  $p < 0.0001$ ) were predictors of events.



Kaplan-Meier curve depicting MACEs according to ZVa values

**Conclusions:** In patients with severe AS, a  $ZVa > 3.2 \text{ mmHg/ml/m}^2$  is the strongest predictor of cardiovascular events, independently from the treatment modality. The ventriculo-arterial impedance plays thus a fundamental role in AS, defining the natural history of the disease and suggesting that a careful reduction of LV afterload is fundamental in the clinical management of these patient