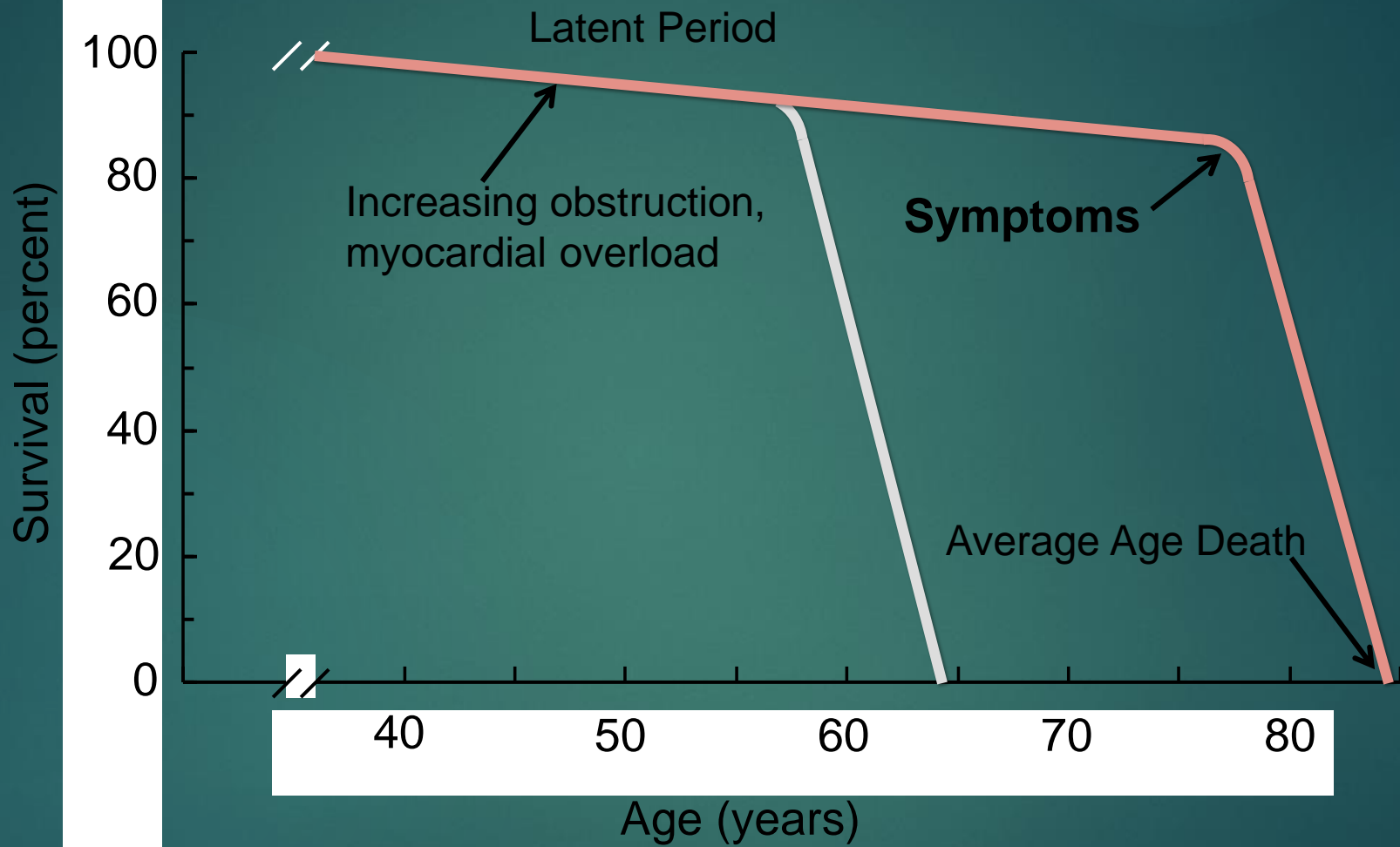


ARE WE WAITING TOO LONG TO INTERVENE IN AS

YES AND NO

CLASS I INDICATIONS FOR AVR

- SYMPTOMATIC SEVERE AS
- OR ASYMPTOMATIC LV DYSFUNCTION

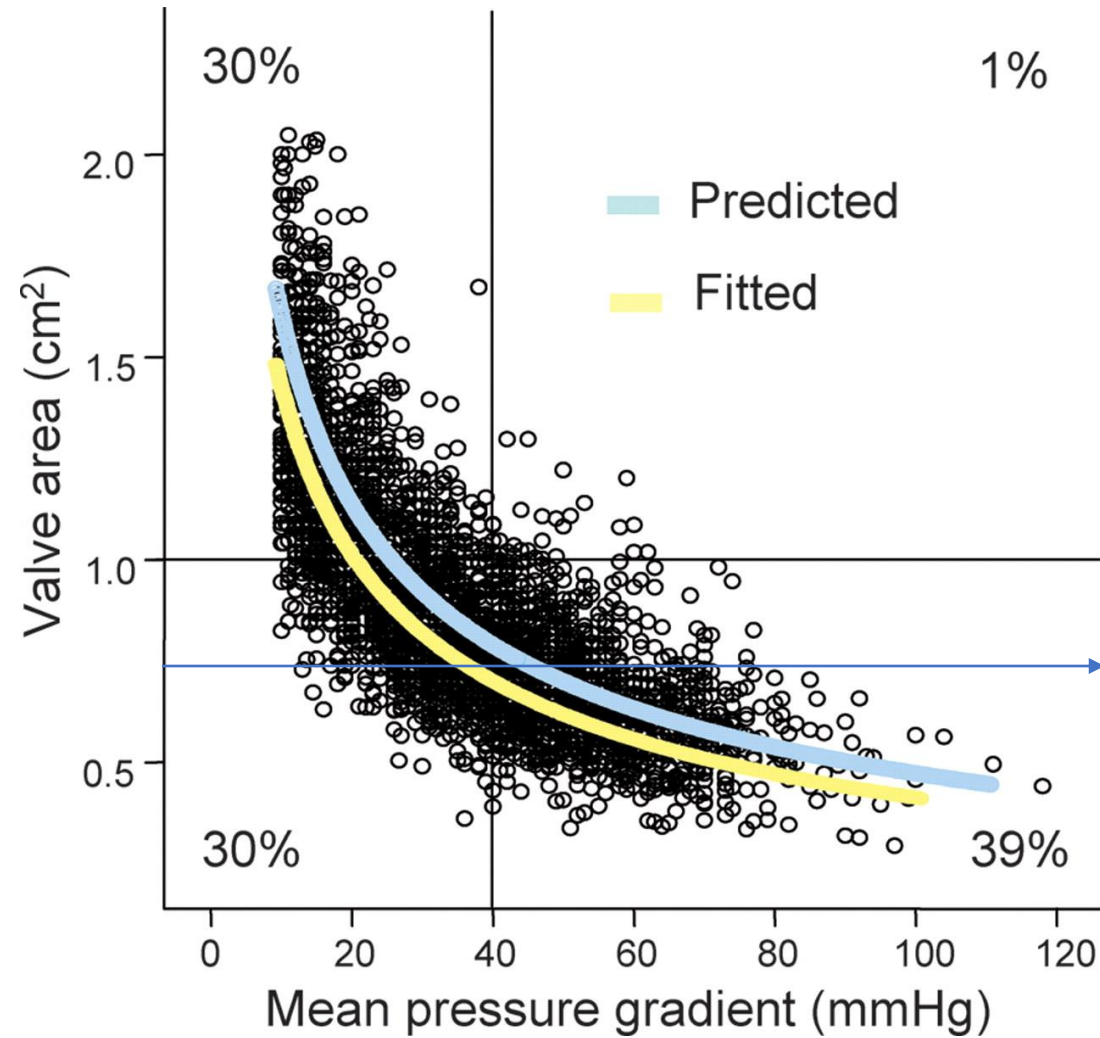


- THE REAL DEFINITION OF “SEVERE” AS IS THE AMOUNT OF OBSTRUCTION TO OUTFLOW THAT CAUSES A BAD OUTCOME

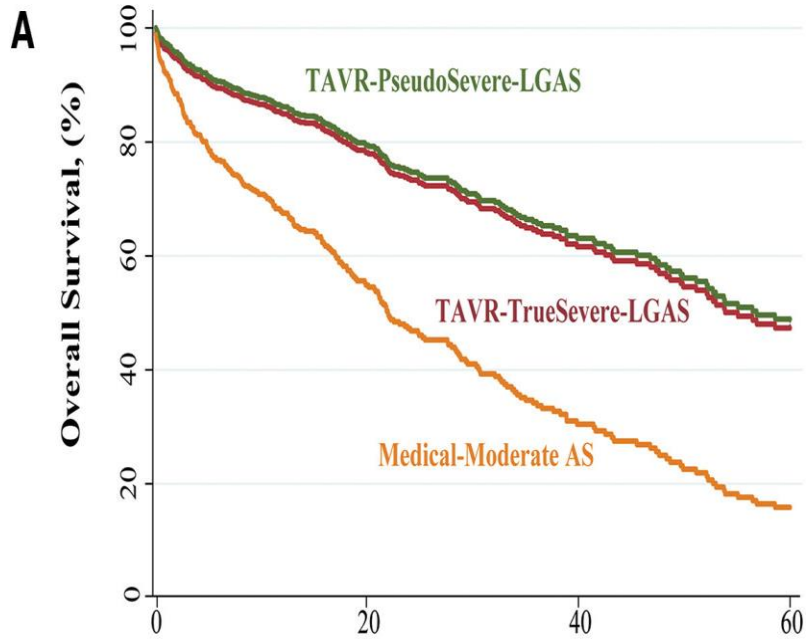
SEVERE AS (still troubled)

- $1/4/40/0.6$

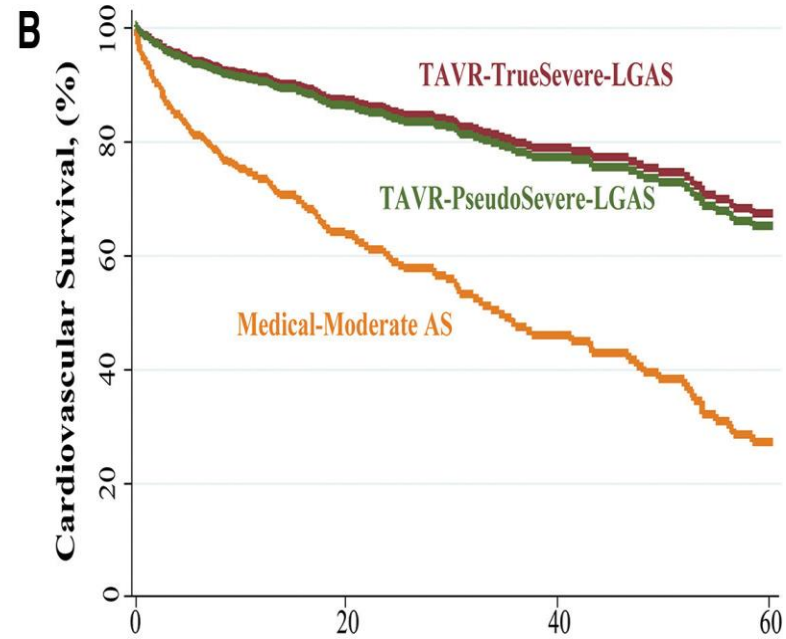
Valve area vs. mean pressure gradient of 3483 echocardiographic studies in patients with aortic valve stenosis and normal left ventricular function.



Minners J et al. Eur Heart J 2008;29:1043-1048



Patients at risk:	Follow-up time, (months)		
179	40	7	3
527	94	30	8
470	229	114	55



Patients at risk:	Follow-up time, (months)		
179	40	7	3
527	94	30	8
470	229	114	55

LUDWIG et al CIRC INT 2023

MEAN GRADIENT 25, AVA 0.72; PSEUDO TRUE vs PSEUDO DEFINED BY Ca++

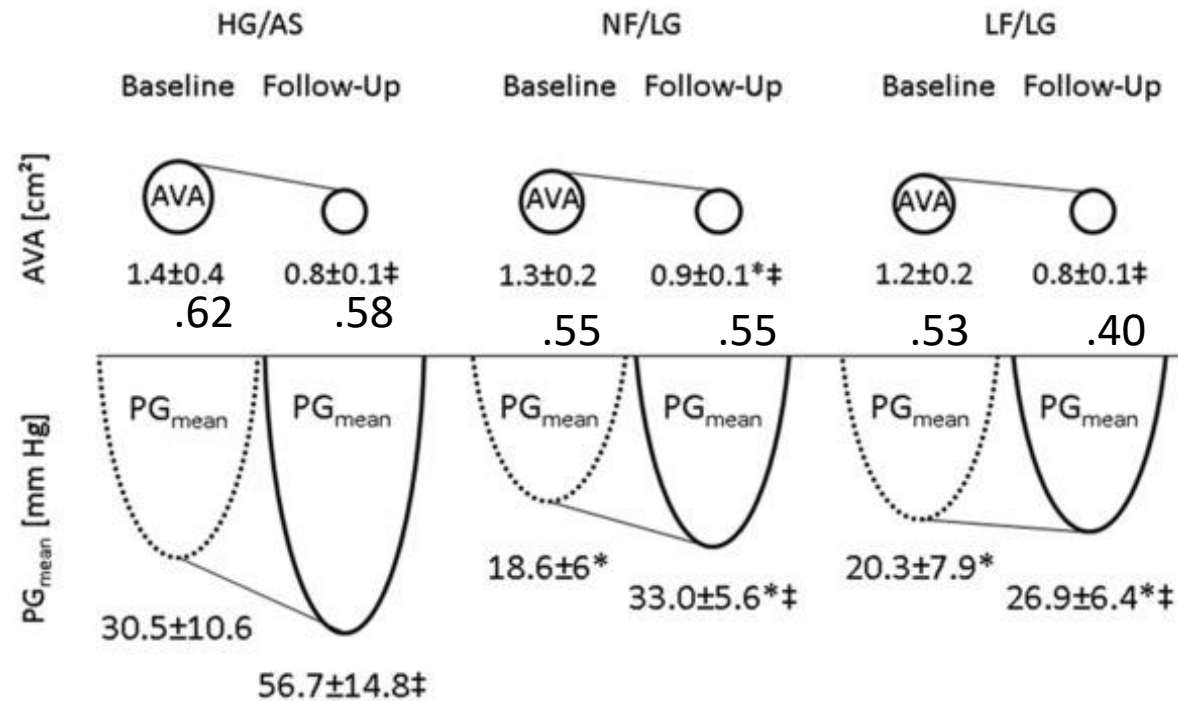


Figure 3. Progression of AVA and PGmean from baseline to follow-up. *P < .05, HG/AS versus NF/LG and LF/LG. †P < .05, follow-up versus baseline values, compared using Wilcoxon signed rank test.

Sebastian Herrmann, Bastian Fries, Dan Liu, Kai Hu, Stefan Stoerk, Wolfram Voelker, Catharina Ruppert, Kristina Lorenz, Georg Ertl, Frank Weidemann

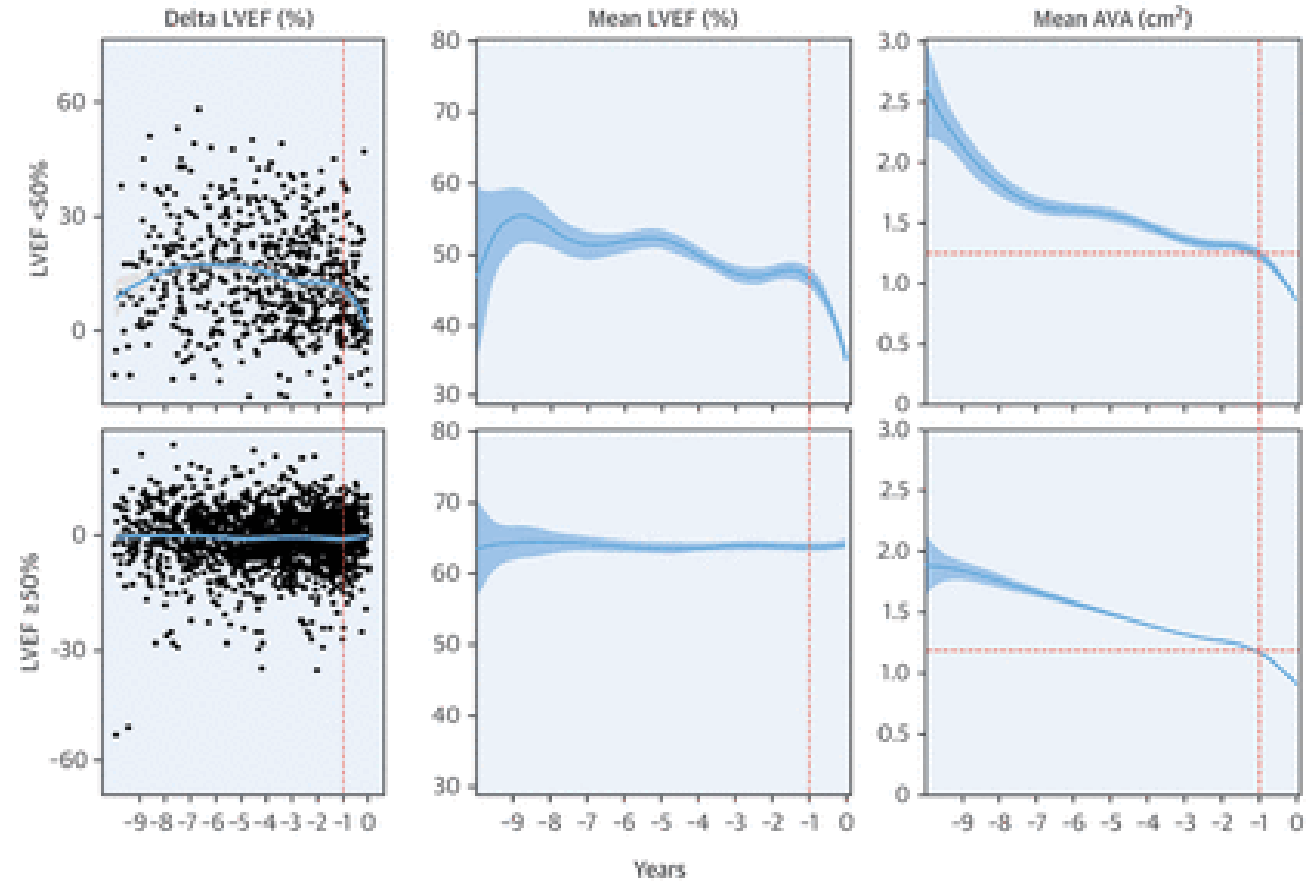
Differences in Natural History of Low- and High-Gradient Aortic Stenosis from Nonsevere to Severe Stage of the Disease

Journal of the American Society of Echocardiography, 2015, Available online 28 August 2015

CENTRAL ILLUSTRATION: Time Course of Left Ventricular Ejection Fraction and Aortic Valve Area

A. An LOESS Smoother Curve

B. A Mixed Linear Models



Ito, S. et al. *J Am Coll Cardiol.* 2018;71(12):1313-21.

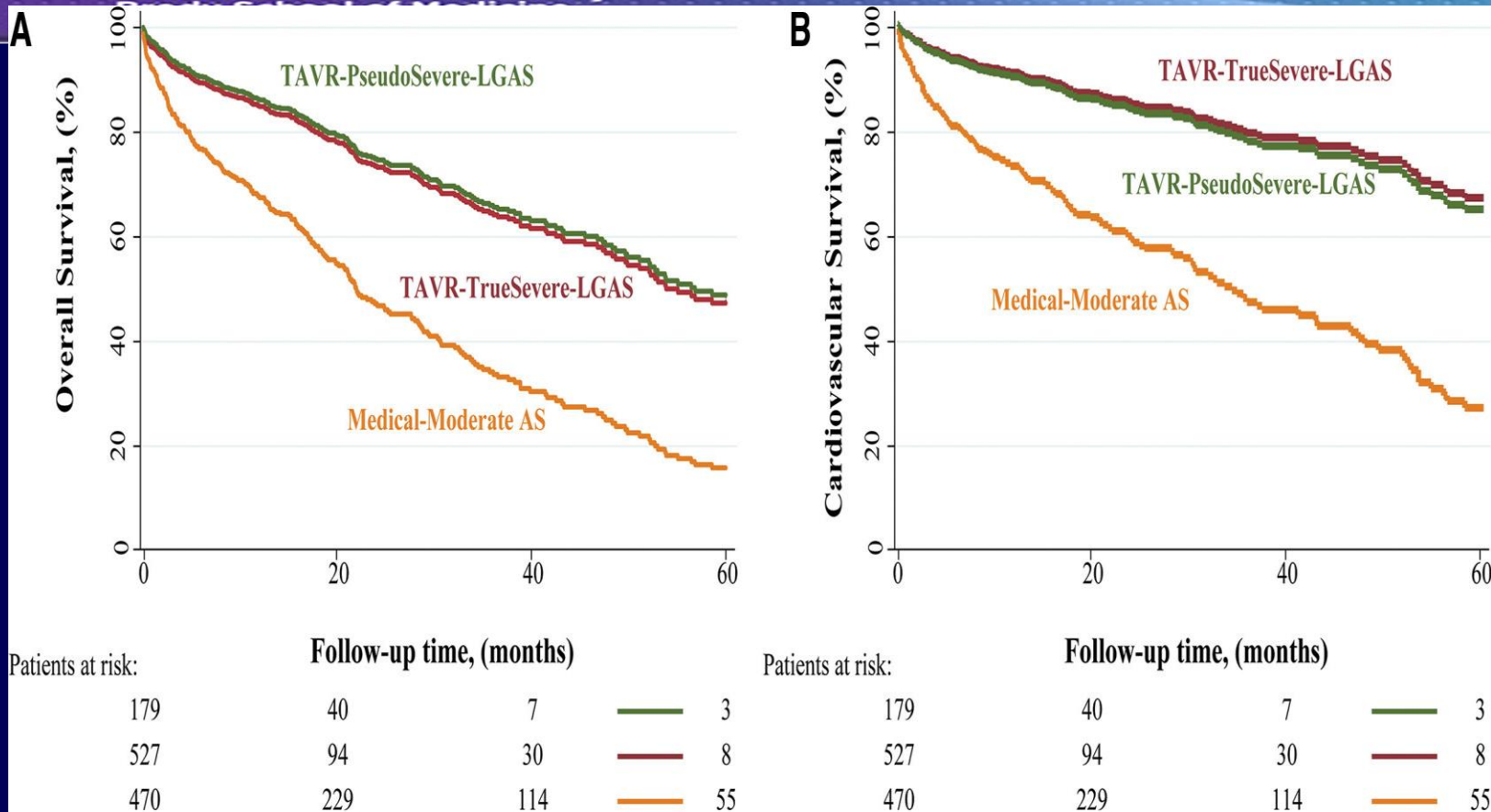


SEVERE AS

- Aortic $V_{max} \geq 4$ m/s or mean $\Delta P \geq 40$ mm Hg
- AVA typically is ≤ 1.0 cm² (or AVAi 0.6 cm²/m²) **but not required to define severe AS**
- Very severe AS is an aortic $V_{max} \geq 5$ m/s or mean $P \geq 60$ mm Hg



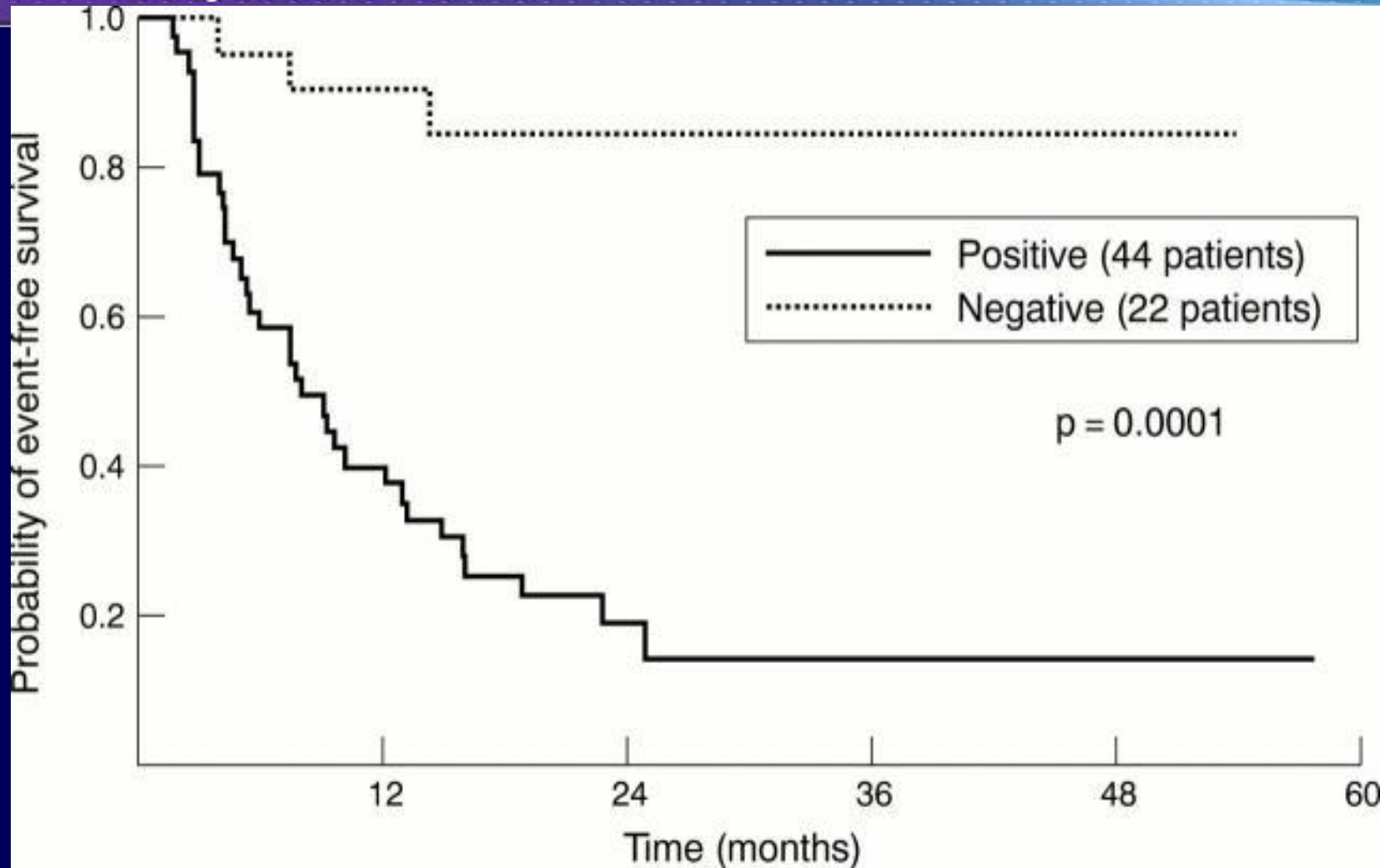
**AVA IS VALUABLE BUT VULNERABLE; IT
IS INFORMATIVE BUT NOT IMPERATIVE**



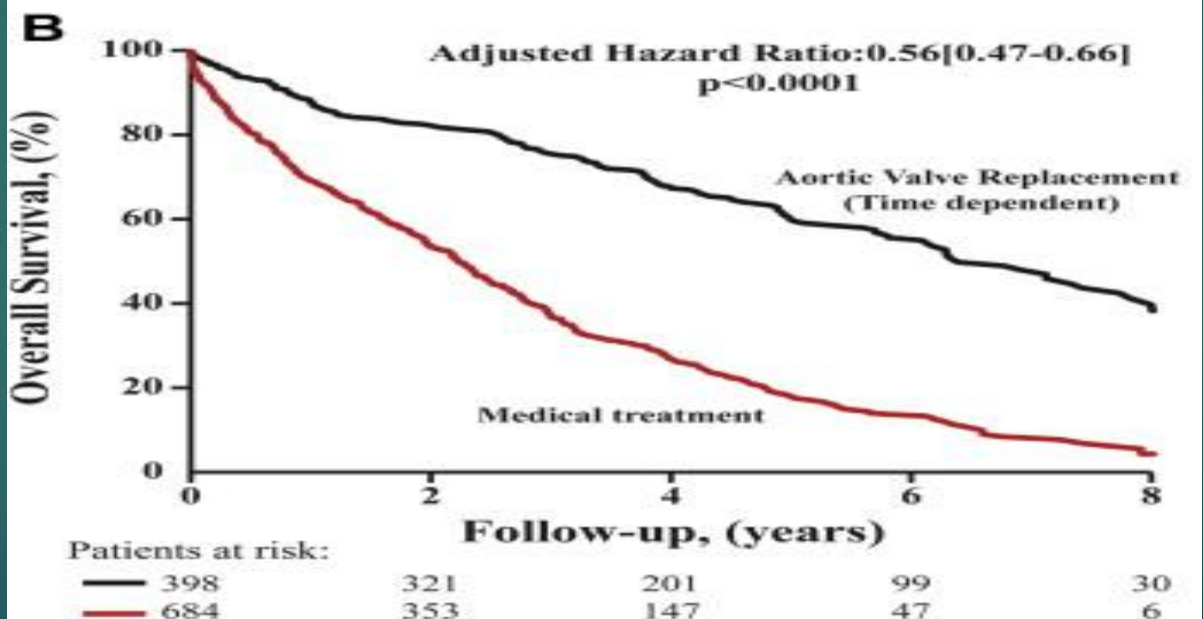
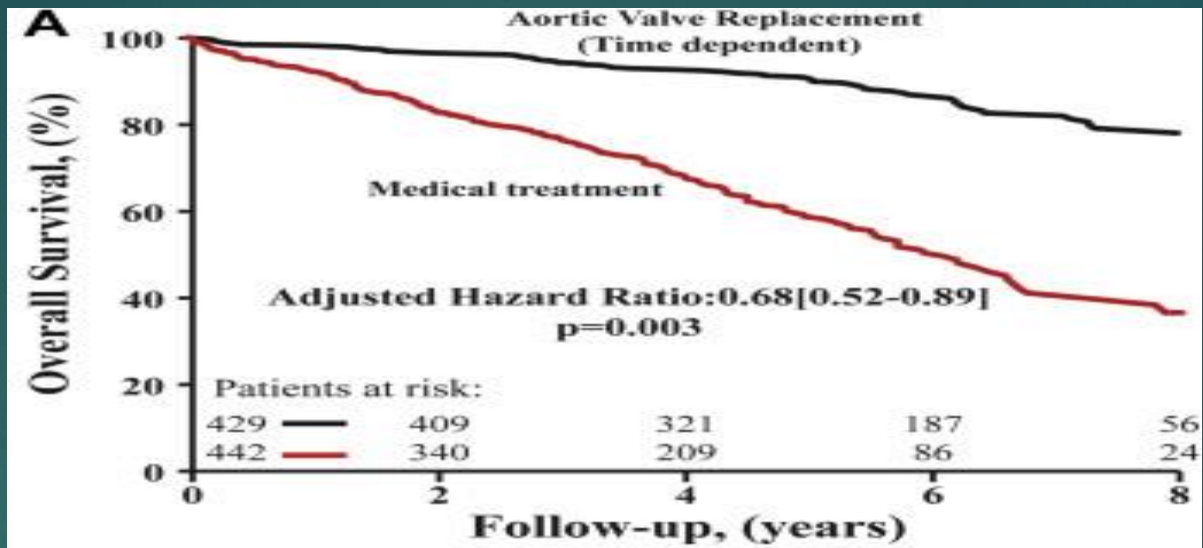
LUDWIG et al CIRC INT 2023

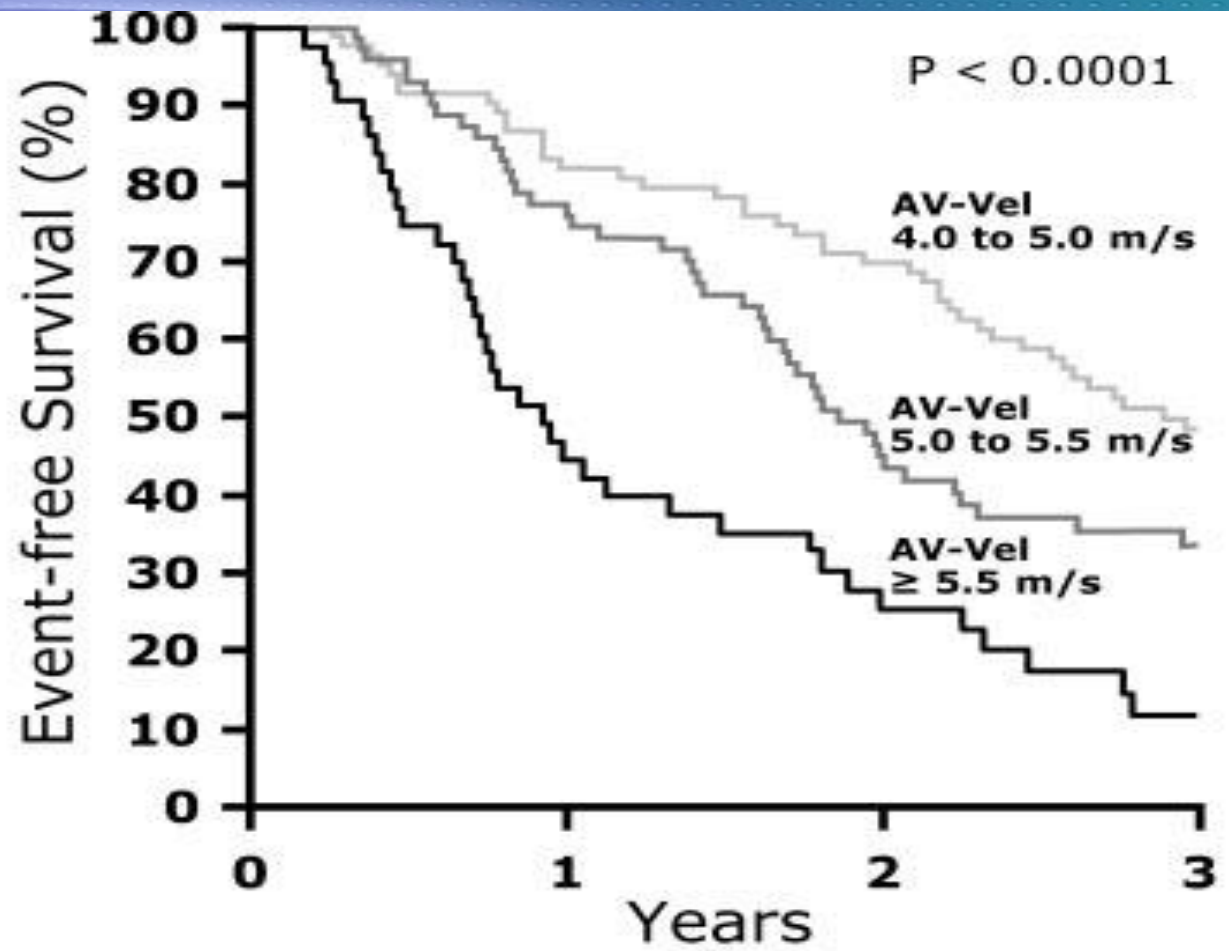
MEAN GRADIENT 25, AVA 0.72; PSEUDO TRUE vs PSEUDO DEFINED BY Ca++

NOT SURE ABOUT SXS



AMATO et al HEART, 86:381; 2001





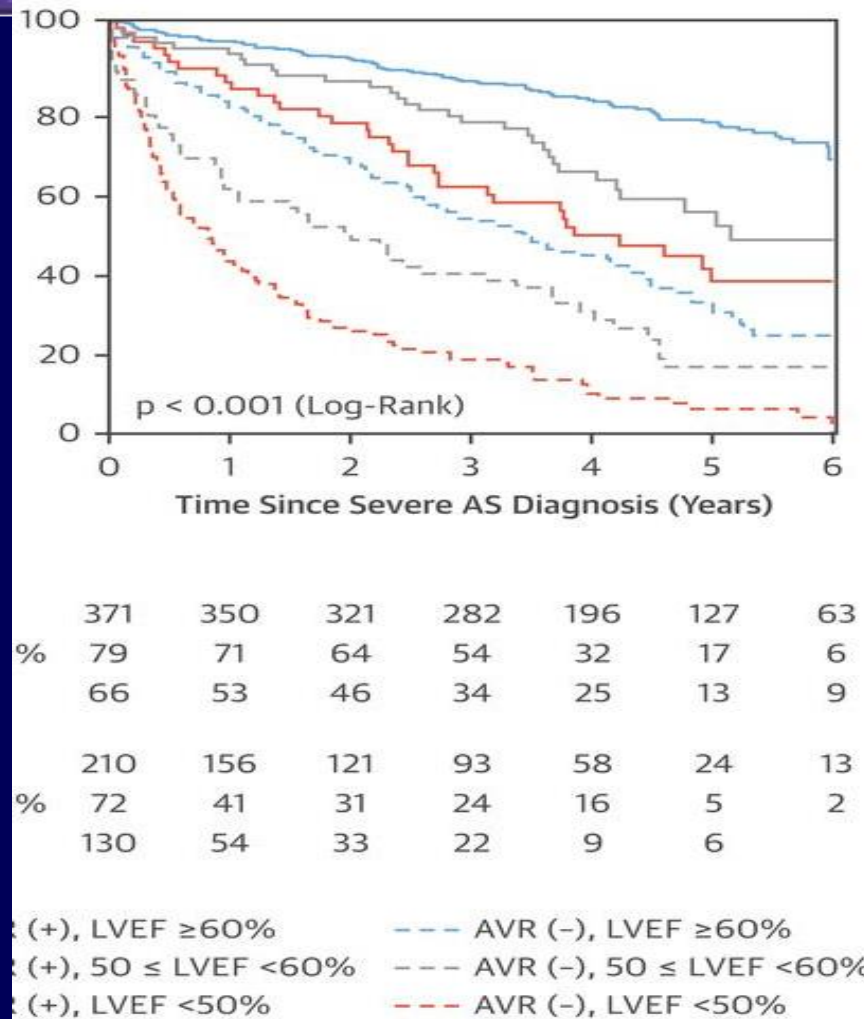
Patients with AV-Vel from 4.0 to 5.0 m/s				
Pts. at risk:	82	69	59	38
Patients with AV-Vel from 5.0 to 5.5 m/s				
Pts. at risk:	72	53	29	18
Patients with AV-Vel ≥ 5.5 m/s				
Pts. at risk:	44	20	11	5

CLASS IIA ASYMPTOMATIC P_{ts}

- VERY SEVERE AS (JET 5 m/sec)
- + EX TEST
- RAPID PROGRESSION
- HIGH BNP

CLASS I

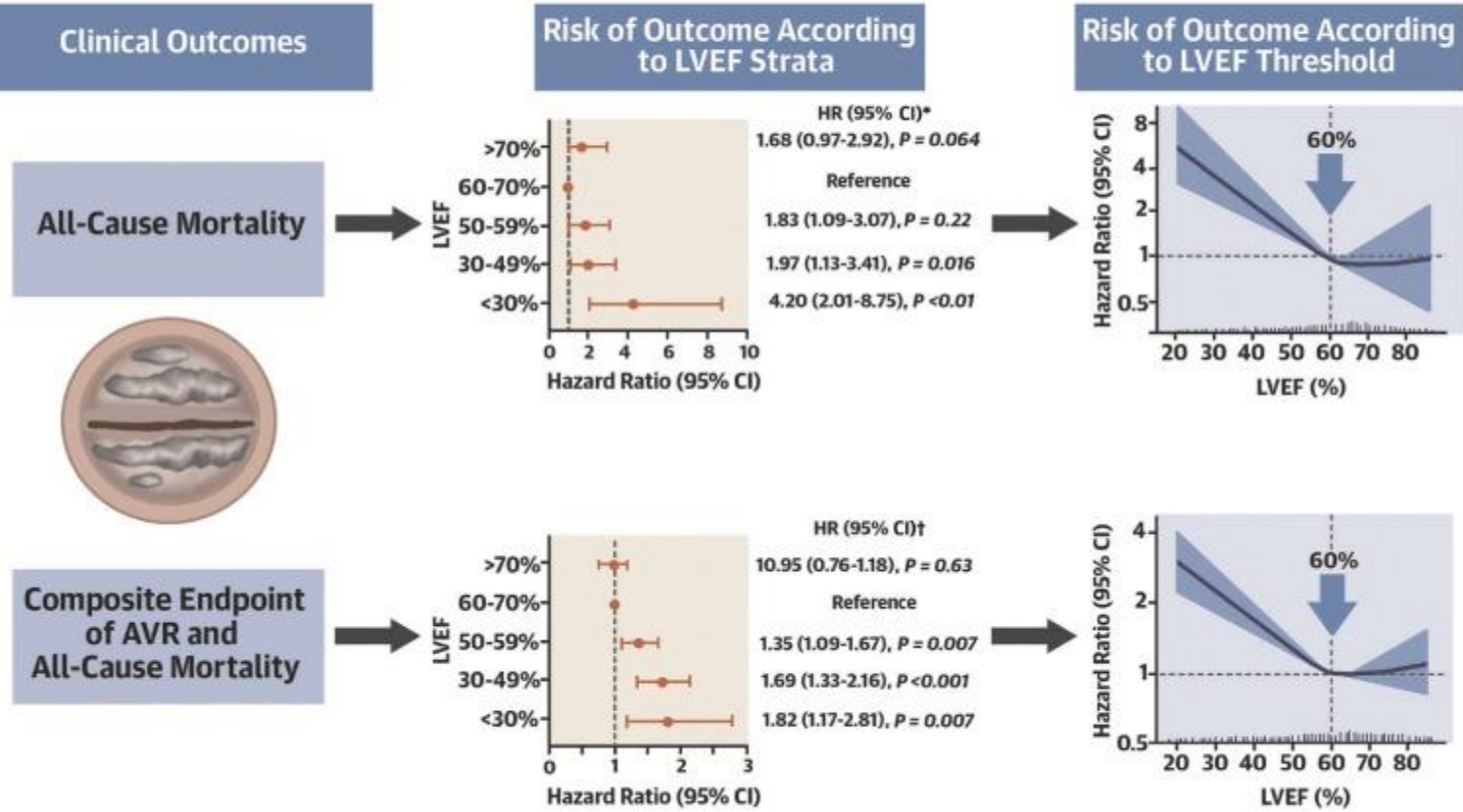
- AVR FOR ASYMPTOMATIC Pt WITH LV DYSFUNCTION
- But then you'd actually have to measure LV function



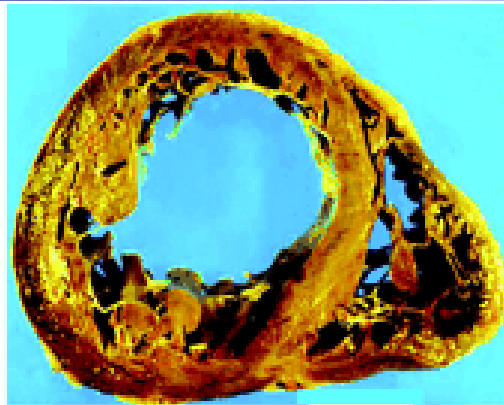
ITO et al JACC 2018

CENTRAL ILLUSTRATION: Impact of Left Ventricular Ejection Fraction on Clinical Outcomes in Bicuspid Aortic Valve Disease

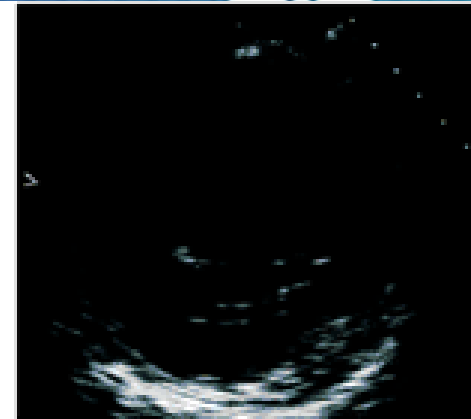
Impact of LVEF on Outcomes in Patients with Bicuspid Aortic Valve Disease



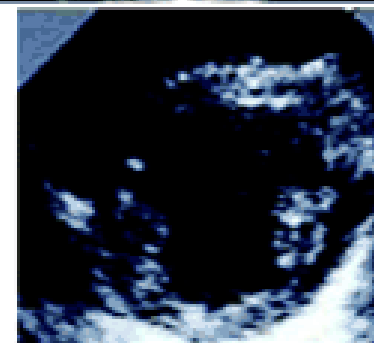
Hecht S, et al. J Am Coll Cardiol. 2022;80(11):1071-1084.



Systolic
Heart Failure



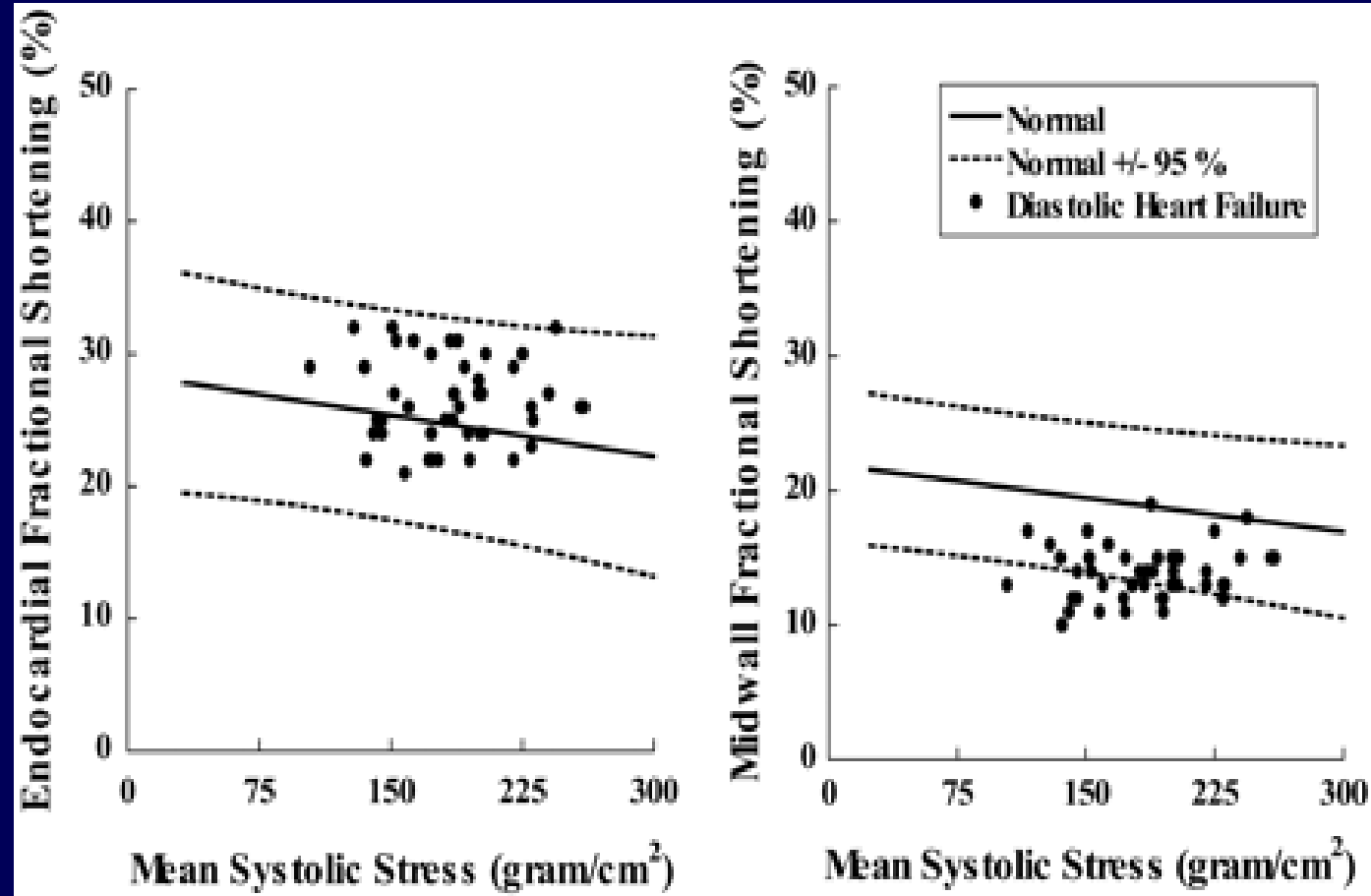
Normal



Diastolic
Heart Failure



AURIGEMMA et al CIRC 113: 296



BAICU et al CIRC 2005

- IF YOU'RE WAITING FOR SYMPTOMS AND AN EF OF 50% YOU'RE LATE.

ON THE OTHER HAND

- NO SXS, EF 60%, NEGATIVE EX TEST AND A BNP NORMAL FOR SEX AND AGE ?????

PARTNER'S EARLY

- RCT OF TAVR vs WW IN ASYMPTOMATIC PATIENTS WITH A NEGATIVE EX TEST
- END POINT: ALL CAUSE MORTALITY, STROKE, UNPLANNED HOSPITALIZATION