Value of Coronary Intervention in Progression of Left Ventricular Dysfunction

Fatih YALÇIN MD, FESC
Professor, Mustafa Kemal University, Antioch, Turkey

Current Position: Fulbright Visiting Professor,
Johns Hopkins University, Baltimore, MD, USA

Disclosure:

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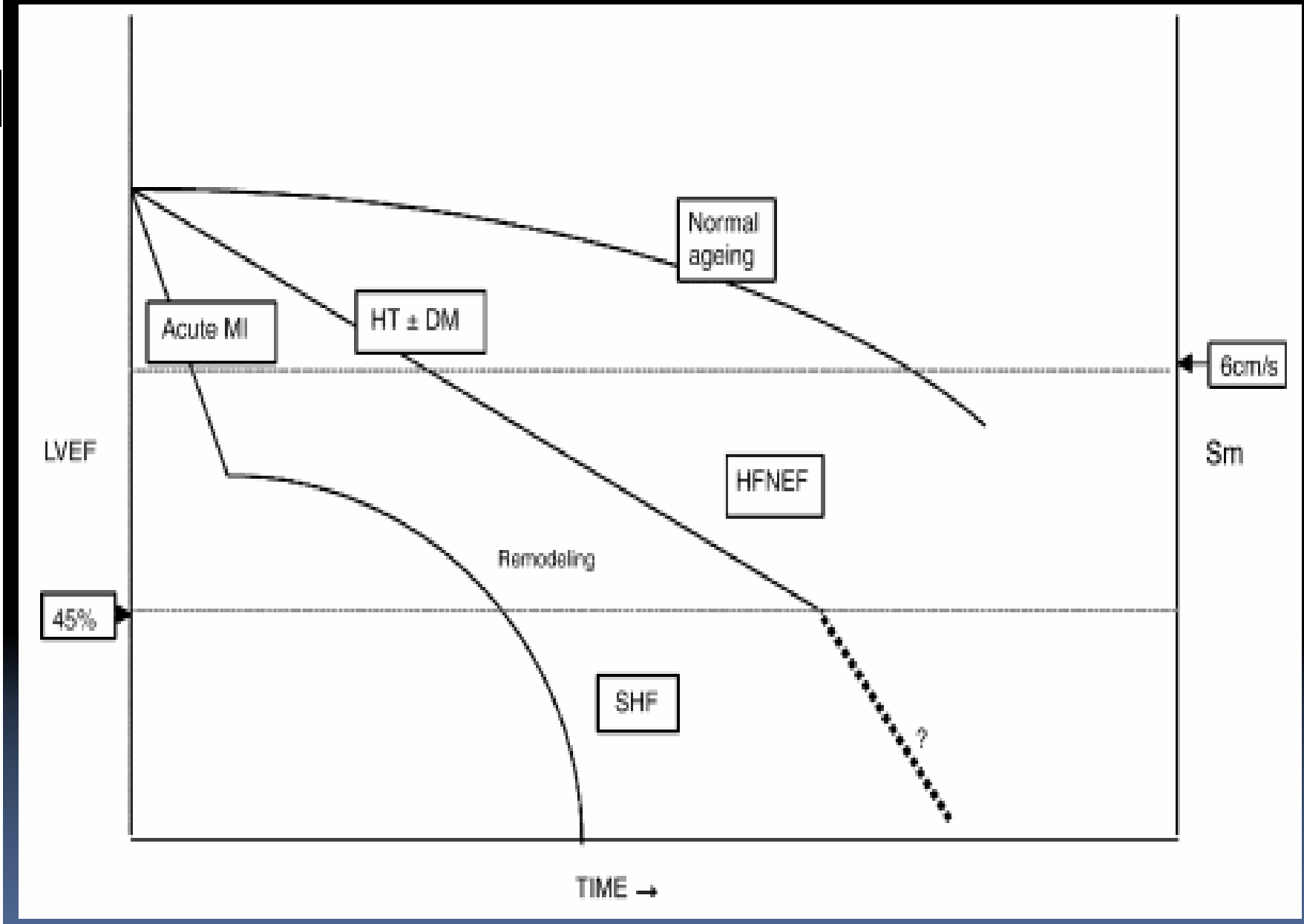

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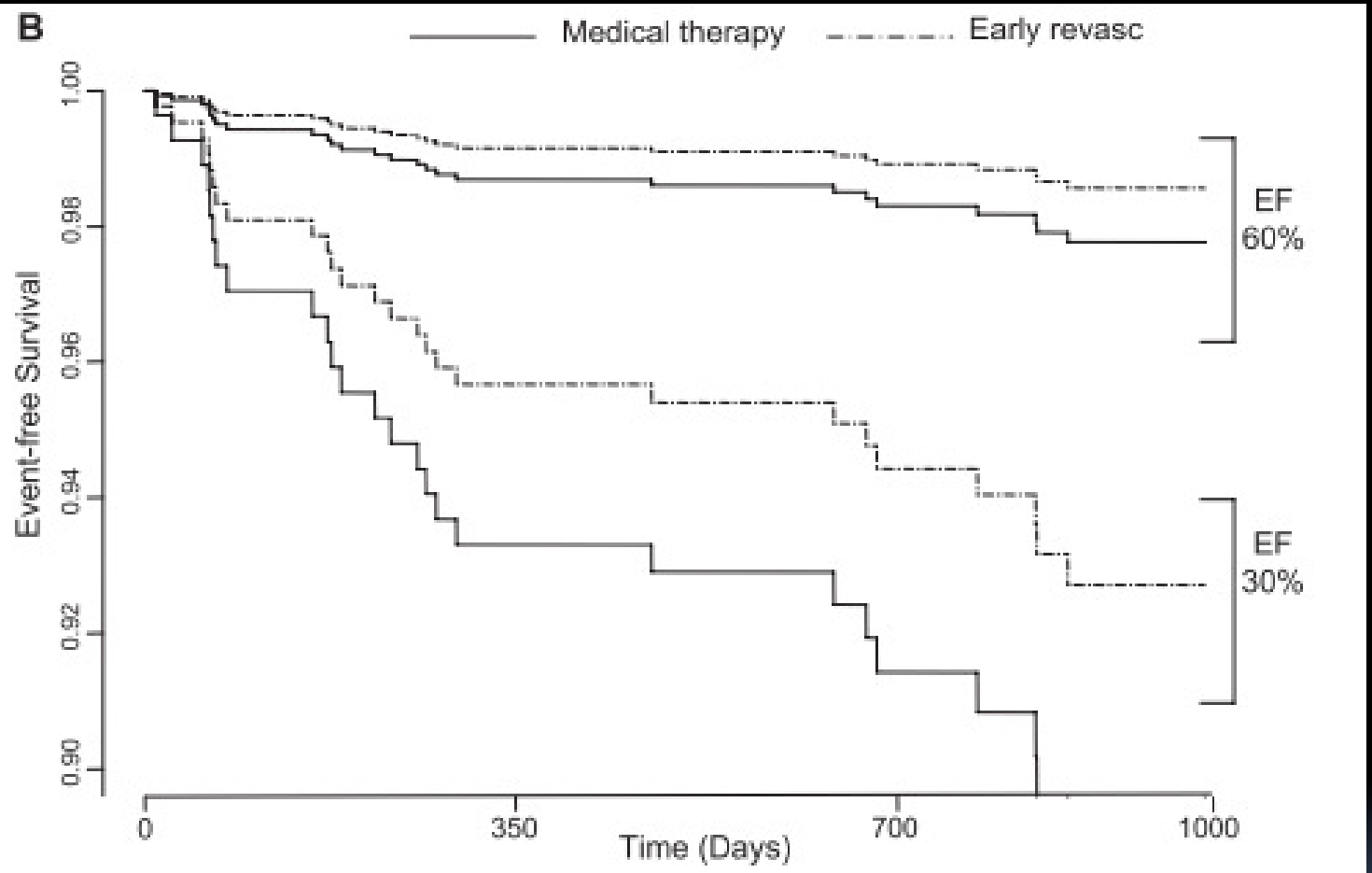

Figure 6. Kaplan-Meier survival curves demonstrating predicted survival free of cardiac death with early revascularization (*revasc*) versus medical therapy. $P < .0001$ for all based on final Cox proportional hazards model. **A**, Patients with no ischemia on MPS, stratified by EF (30% vs 60%) and post-MPS treatment (medical therapy vs revascularization). **B**, Patients with 25% ischemic myocardium on MPS, stratified by EF (30% vs 60%) and post-MPS treatment (medical therapy vs revascularization).

Hachamovitch, R. Journal of nuclear cardiology.2006;12:768-78

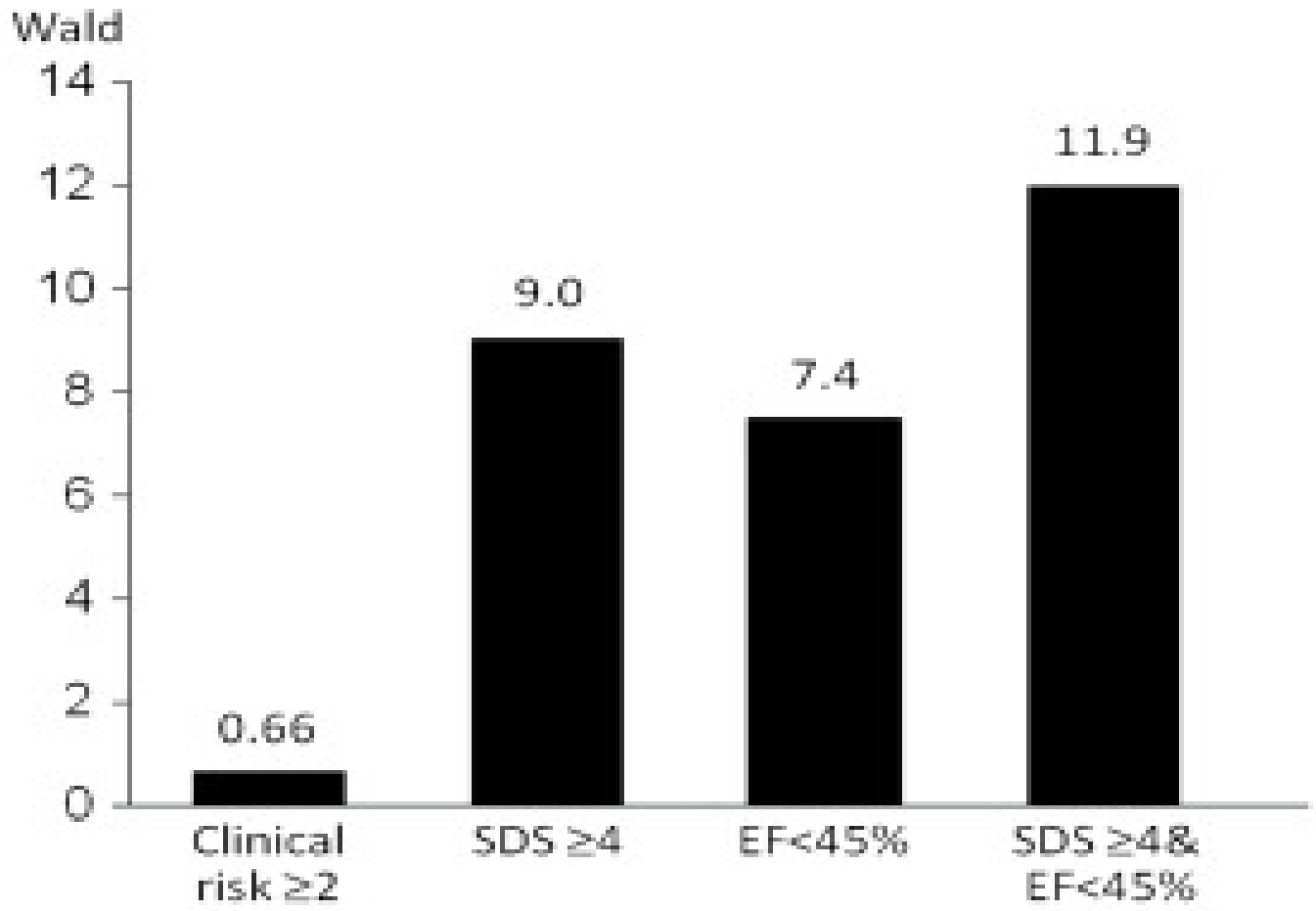

Fig 4. Predictive value for acute coronary syndrome among clinical risk factors, significant myocardial ischemia, low poststress EF and the combination of significant myocardial ischemia and low poststress EF. See Fig 2 for abbreviations.

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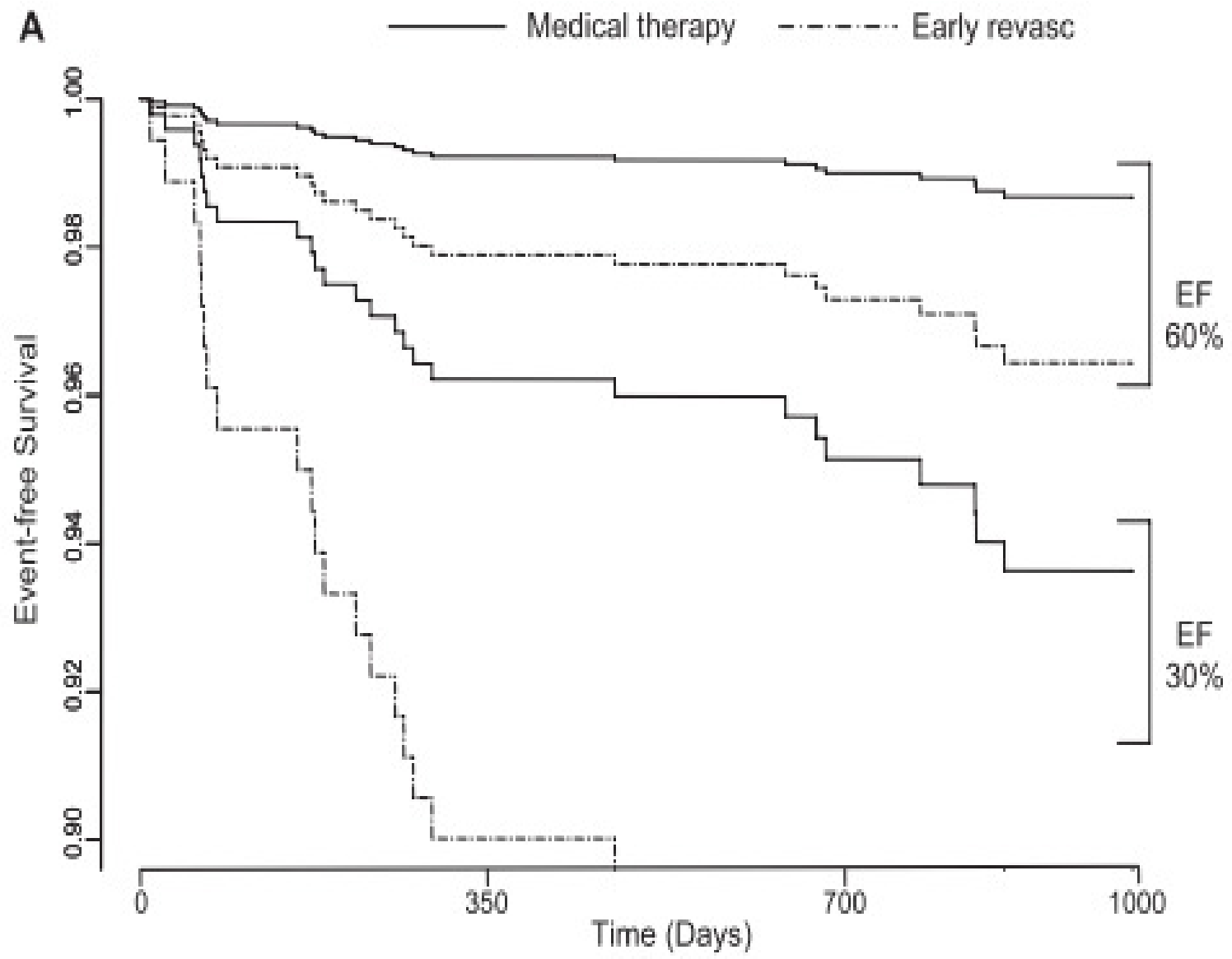

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Prognostic implications of stress-induced transient ischemic dilation of the left ventricle in patients with systolic dysfunction and fixed perfusion defects

Alberto Bestetti [a,*], Riccardo Bigi [b], Paolo Terranova [c], Federico Lombardi [c], Cesare Fiorentini [d]

[a] *Nuclear Medicine Unit, Institute of Radiological Sciences, University of Milan School of Medicine, Casa di Cura San Pio X, Via Nava, 31, 20159 Milano, Italy*

[b] *Cardiology Unit, Department of Cardiovascular Sciences, University of Milan School of Medicine, Centro Diagnostico Italiano, Milan, Italy*

[c] *Cardiology Unit, Department of Cardiovascular Sciences, University of Milan School of Medicine, Ospedale San Paolo, Milan, Italy*

[d] *Cardiology Department of Cardiovascular Sciences, University School of Medicine and Centro Cardiologico Fondazione Monzino IRCCS, Milan, Italy*

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Abstract

Purpose: To verify whether stress-induced transient ischemic dilation (TID) of the left ventricle may help refine prognostic assessment of patients with resting systolic dysfunction and fixed perfusion defects.

Methods: Two hundred seventy patients with resting ejection fraction ≤50% and fixed perfusion defects on exercise (n=180) or dipyridamole (n=90) ECG-gated single-photon emission computed tomography (SPECT) were followed-up for the combined endpoint of death, acute coronary syndrome, and clinically-driven revascularization. The TID ratio was defined as the ratio of LV volumes at stress and rest.

Results: During a median time of 24 months, 47 events (10 deaths, 20 acute coronary syndromes and 17 revascularization) were observed. After adjusting for clinical and stress testing variables, the unfeasible exercise test [hazard ratio (HR) 1.82, 95% confidence interval (CI) 1.02, 3.24] and the highest quartile of TID ratio [HR 1.93, 95% CI 1.05, 3.54] were the only independent predictors of outcome. The highest quartile of TID ratio was associated to significantly lower percent of event-free survival.

Conclusions: Left ventricular TID ratio helps refine outcome prediction in patients with resting systolic dysfunction and fixed perfusion defects, thus reducing risk of a false negative result.

Fig. 1 Myocardial perfusion images show transient cavity dilatation despite normal perfusion. See text for details

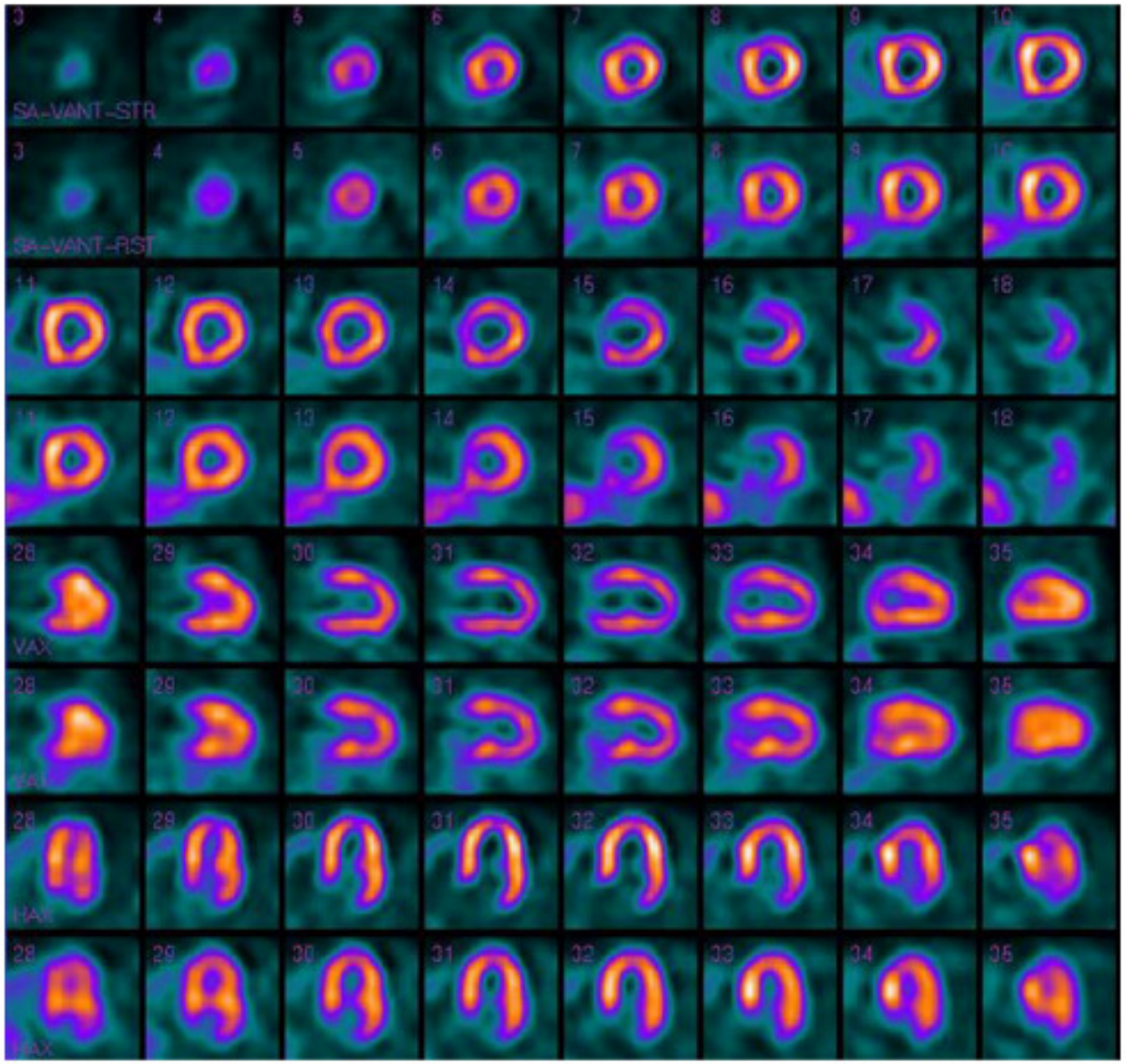

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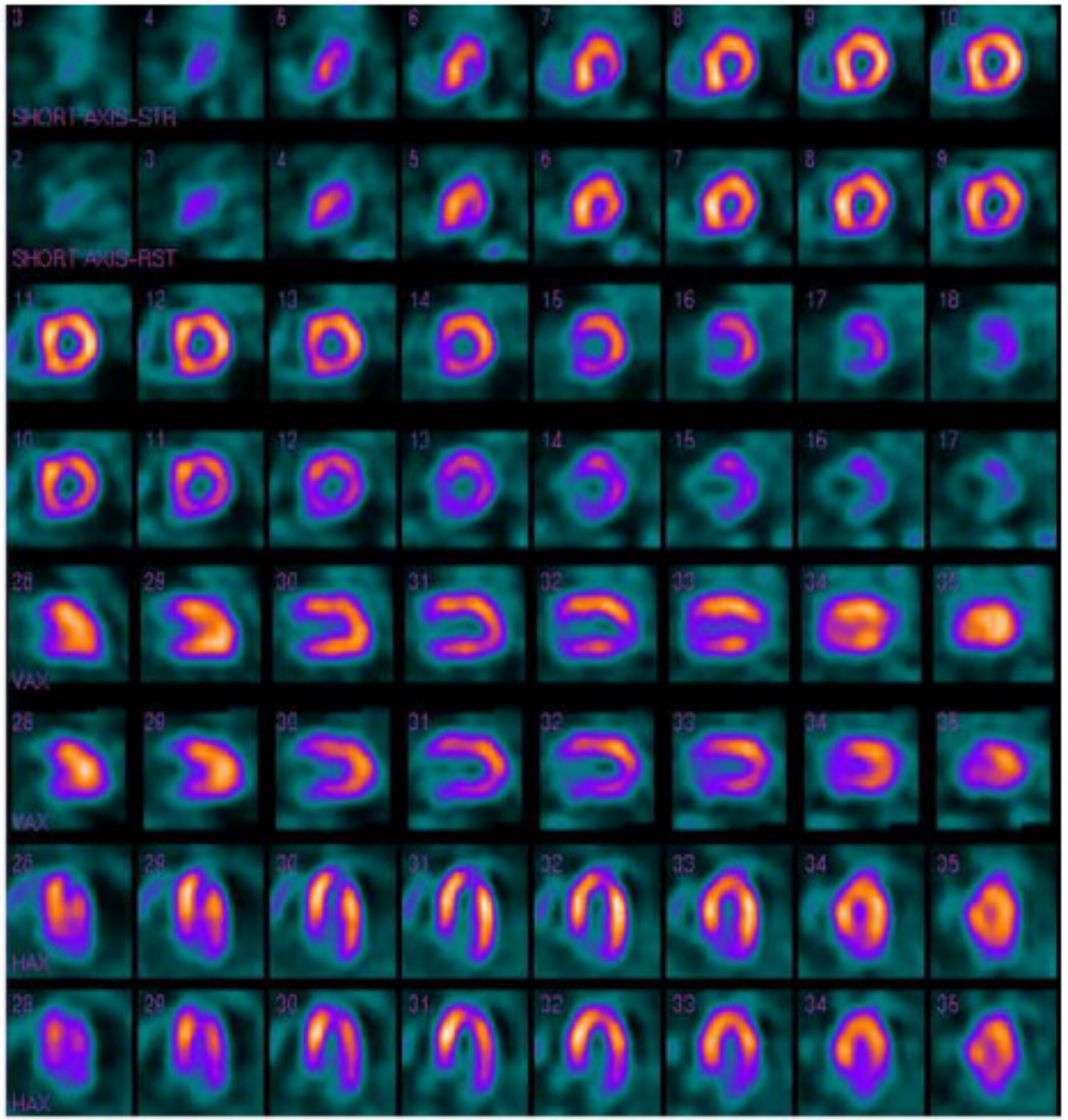
Fig. 3 **a** Myocardial perfusion images show an increase in RV tracer uptake on stress images. See text for details. **b** Myocardial perfusion images show an increase in RV tracer uptake on stress images (gray scale). See text for details



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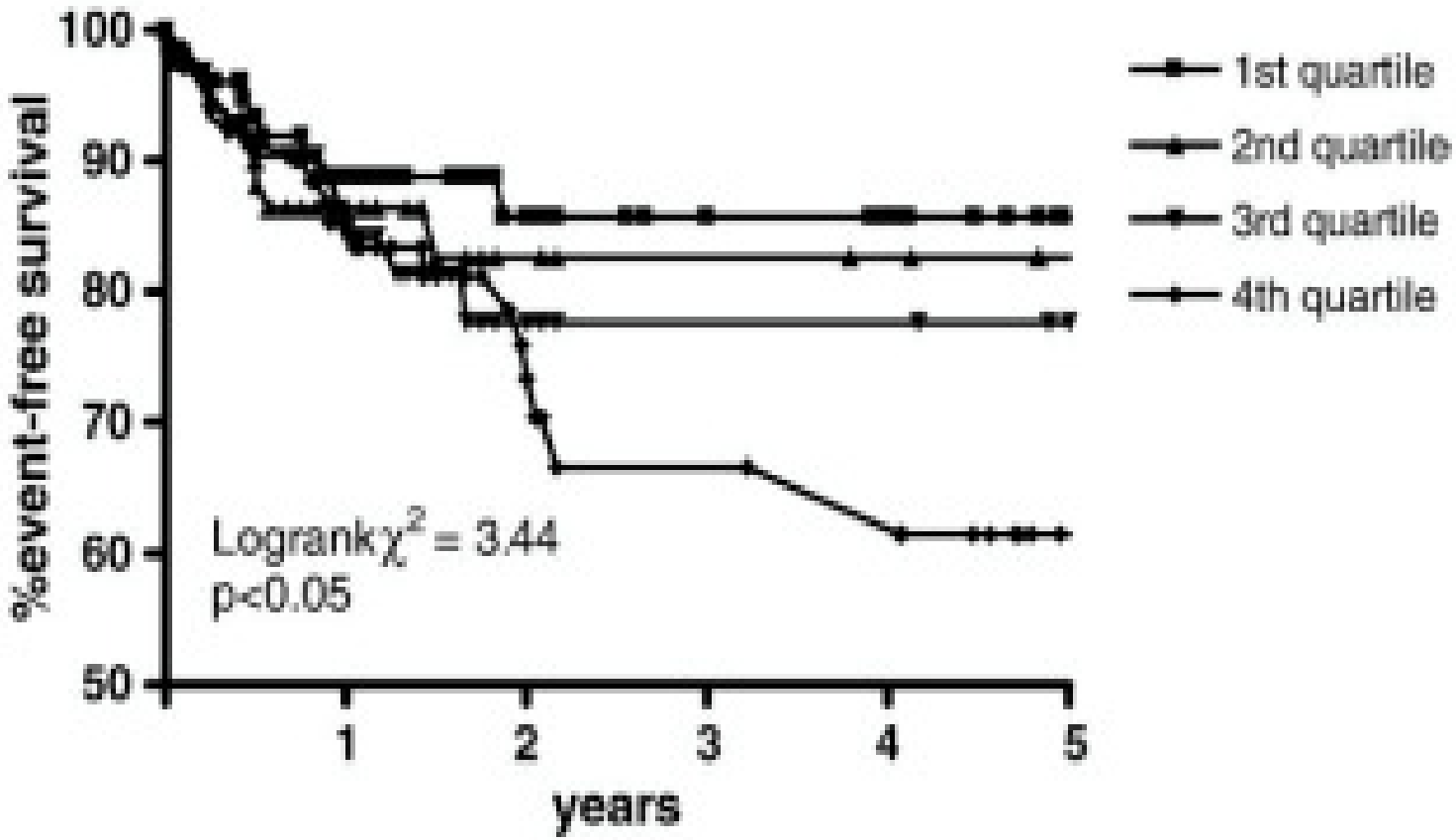

Fig. 1. Percent distribution of target events and revascularization procedures by ascending quartiles of peak-rest end-diastolic volume variation.

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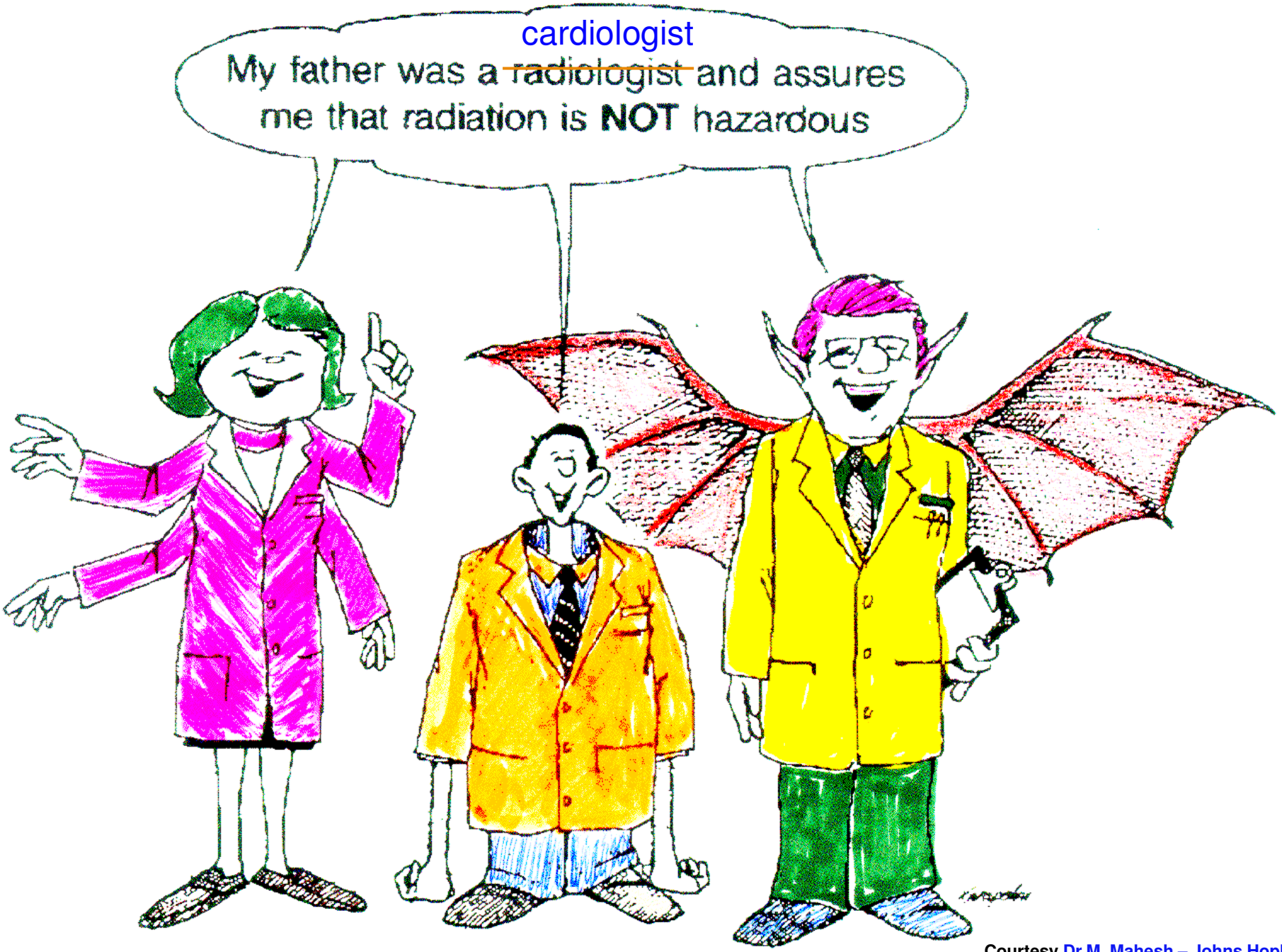

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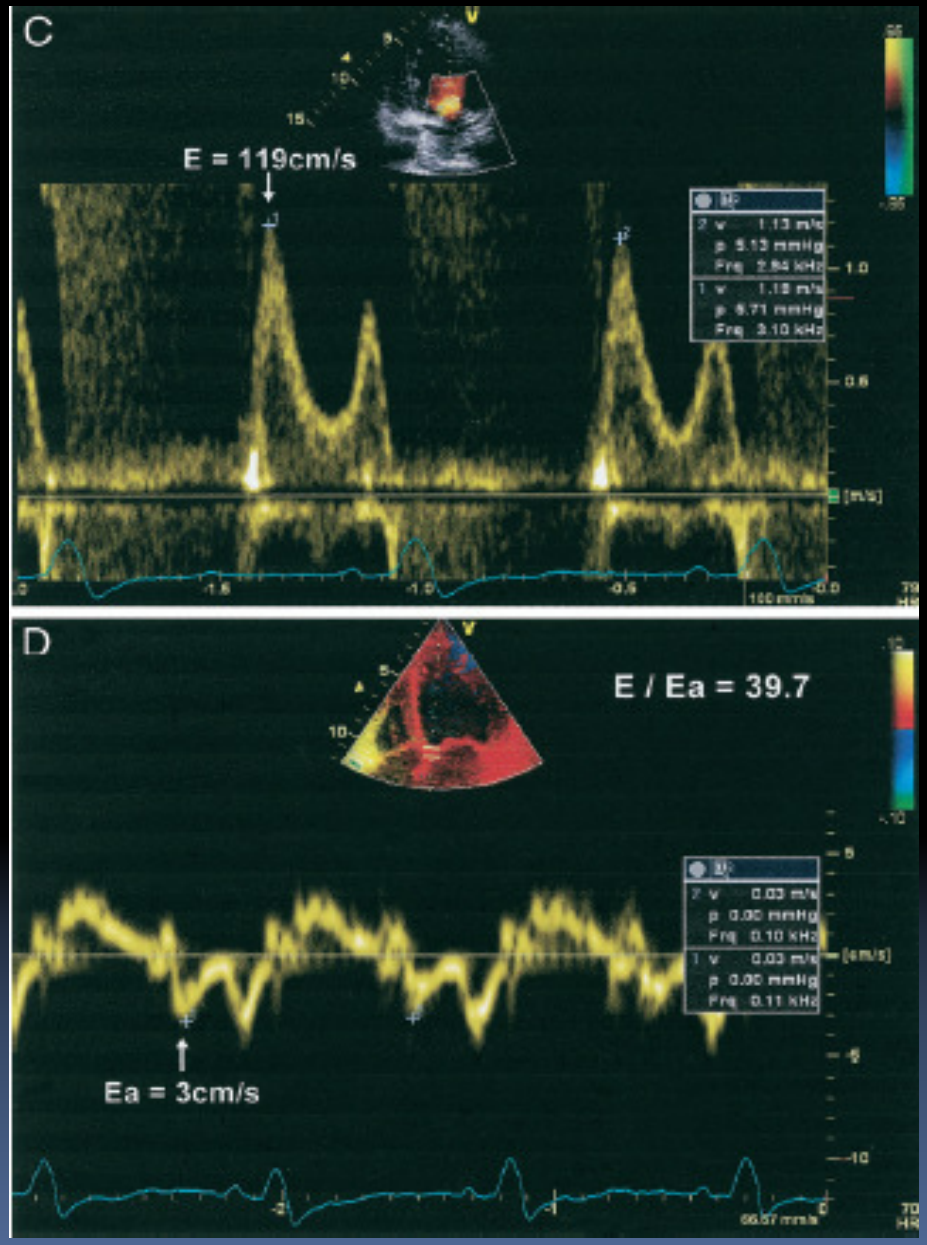

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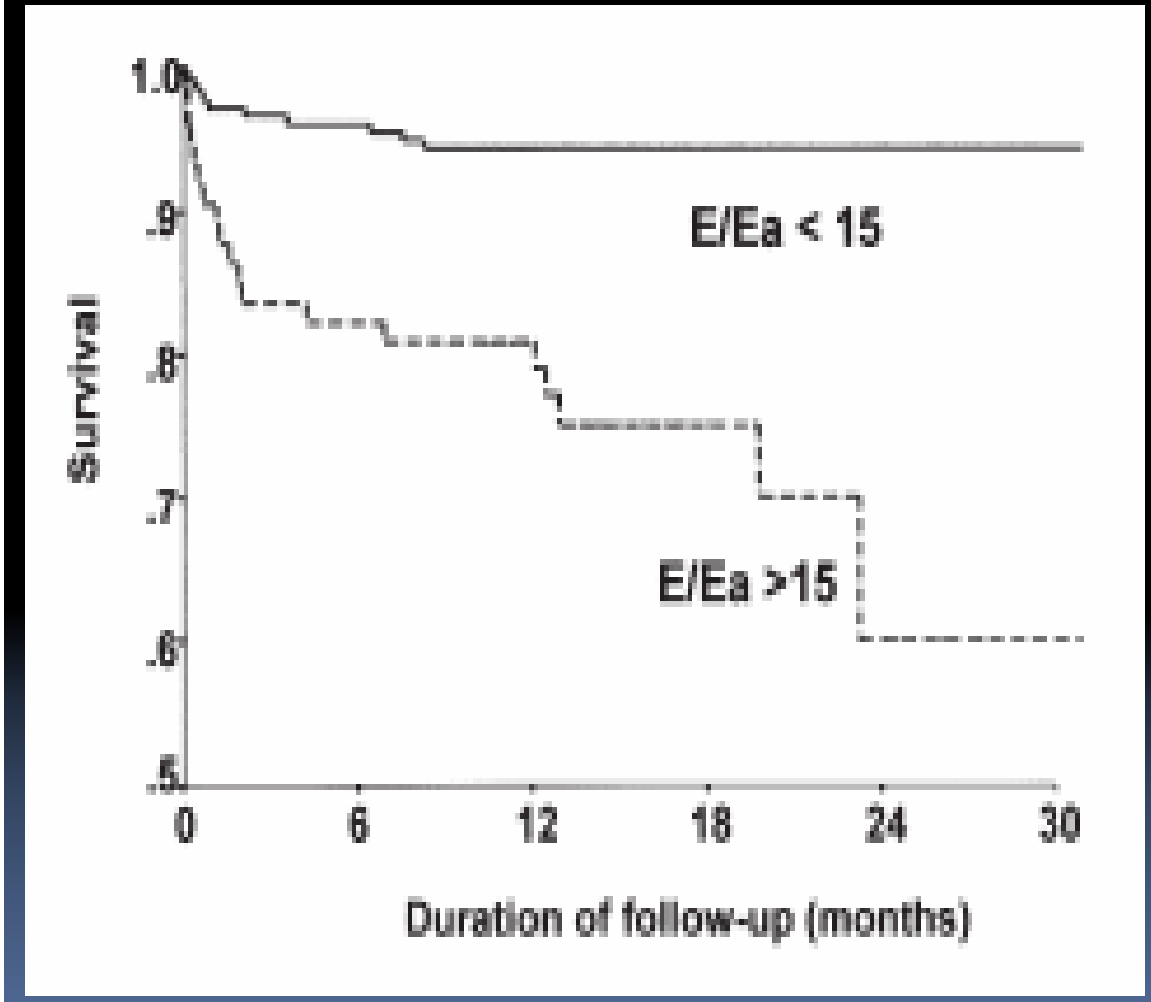

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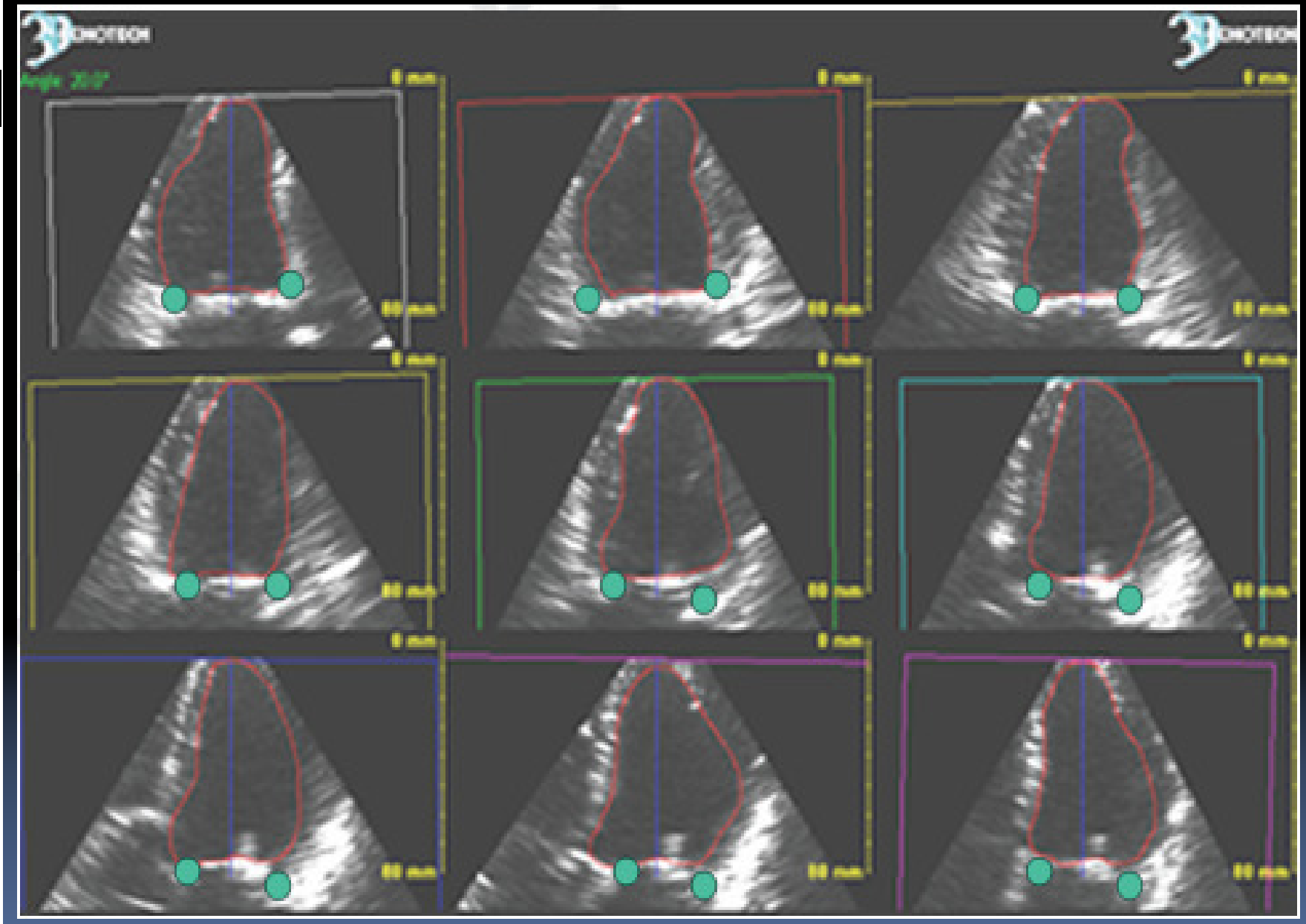
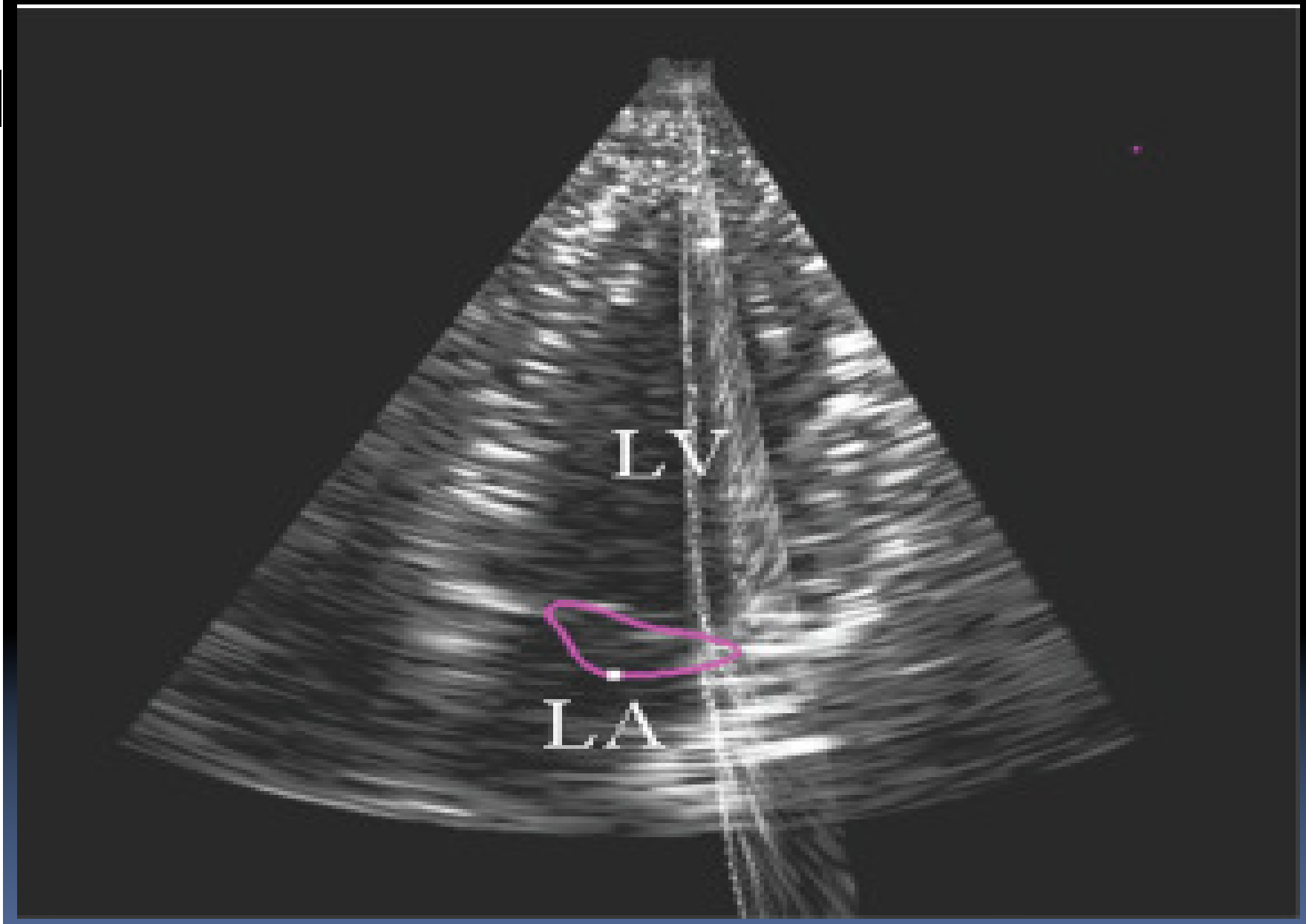


Yalçin F, et al; Echocardiography, 2008



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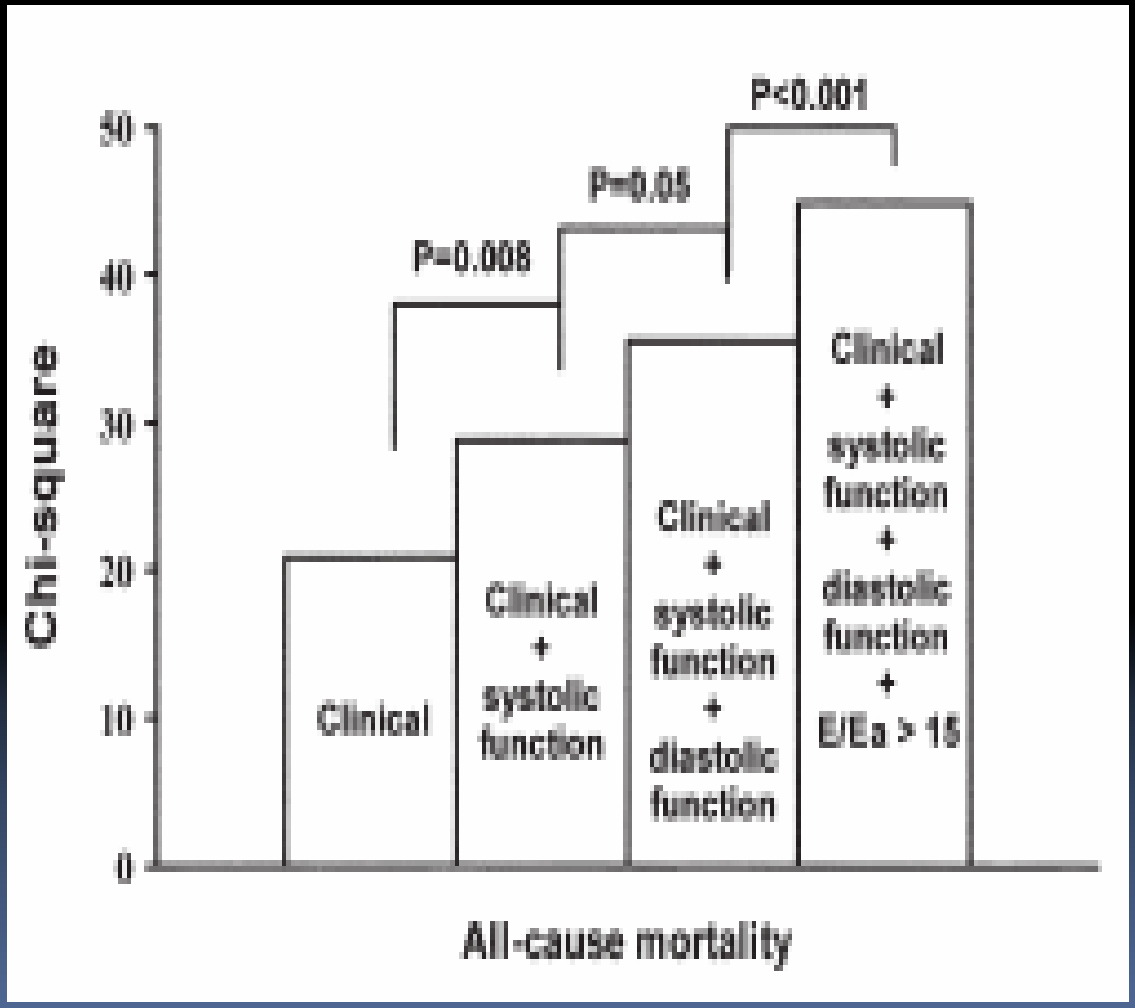

Yu CM, JACC, 2007

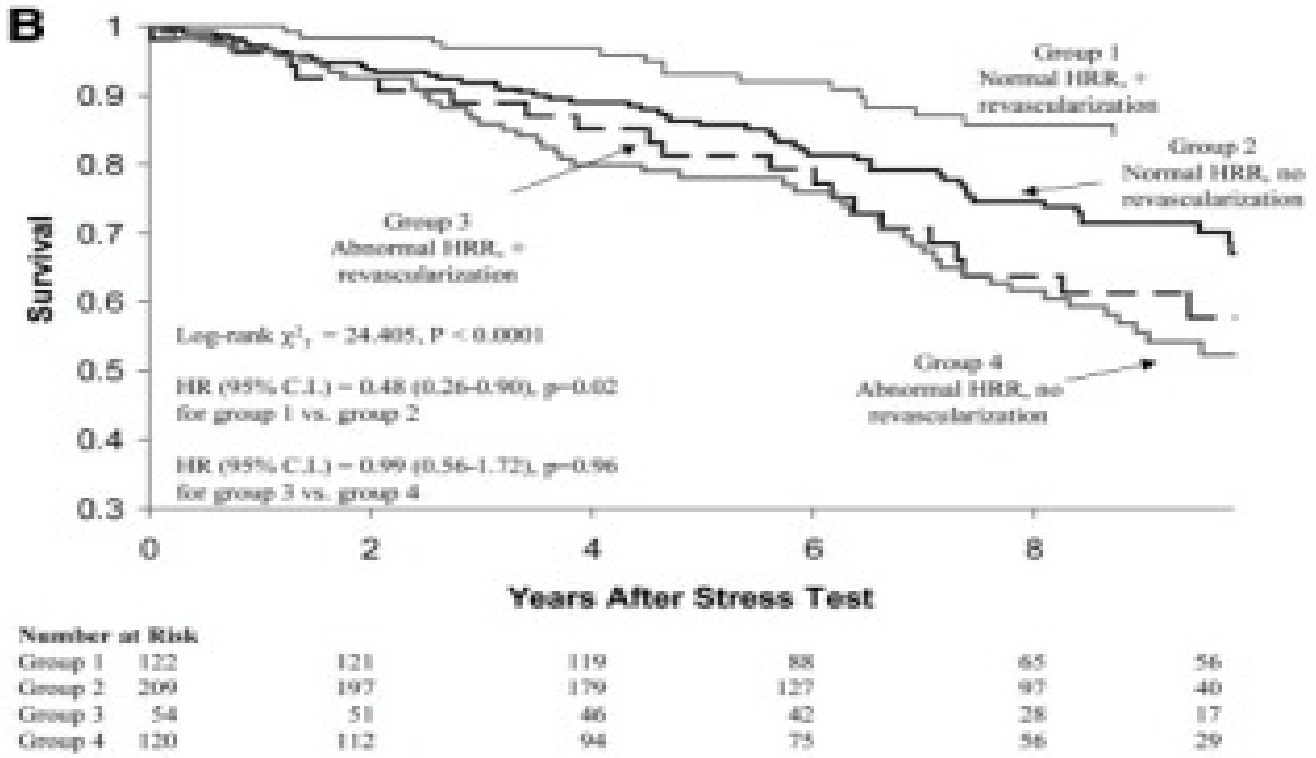

Figure 2. Kaplan-Meier curves for ischemic patients with impaired functional capacity in propensity-matched cohort (A) and in all patients (B). In propensity-matched cohort, ischemic patients with impaired functional capacity and abnormal HRR were at high risk of dying and did not have improved survival with revascularization. In contrast, ischemic patients with impaired functional capacity and normal HRR had lower mortality after revascularization. B, Similar trend was seen when same subgroup analysis was performed in all patients.

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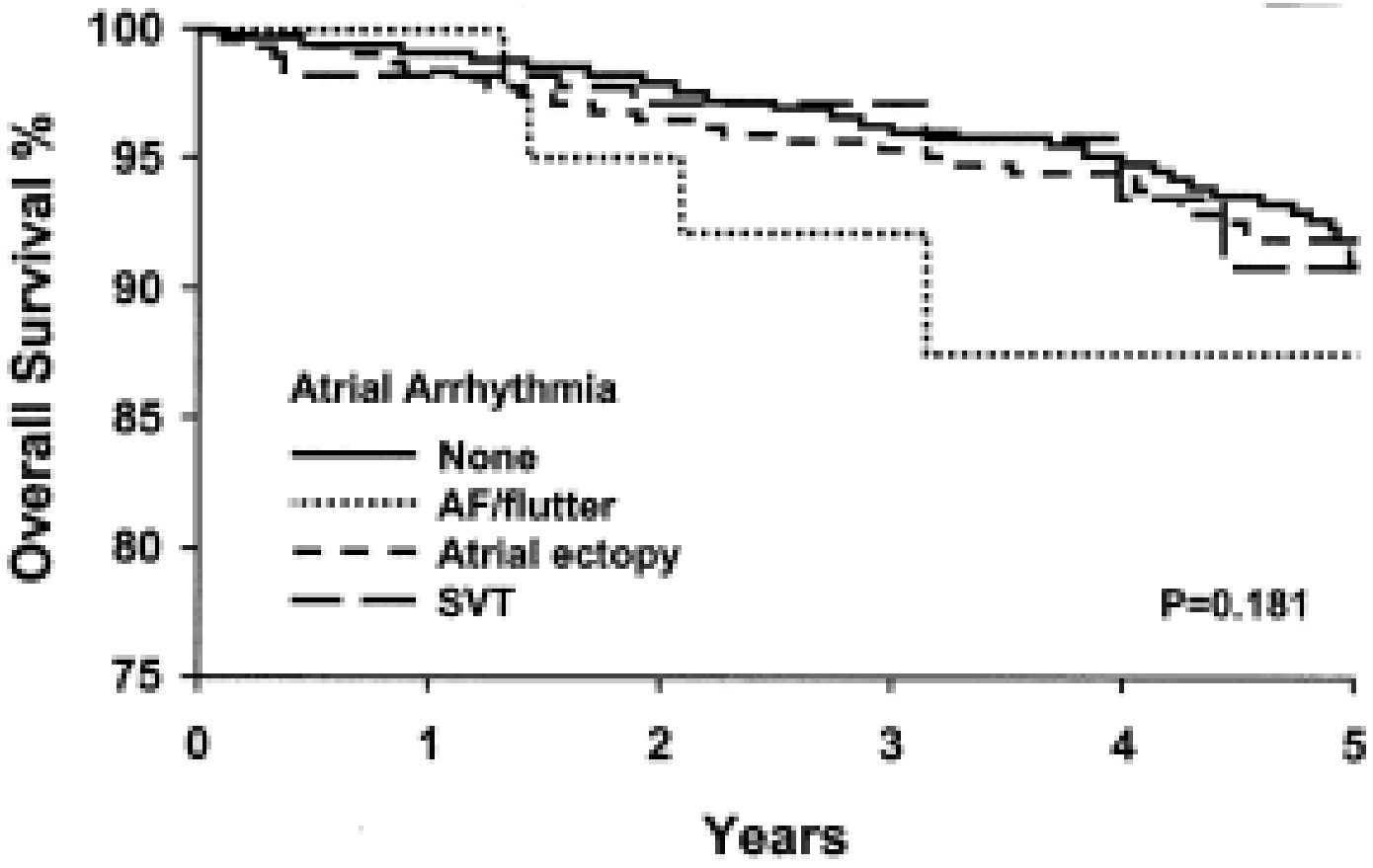

Figure 1. The Kaplan-Meier analysis of the association of exercise-induced atrial arrhythmias and five-year overall survival. AF = atrial fibrillation; SVT = supraventricular tachycardia.

Bunch TJ. JACC 2004:43;1236-40.

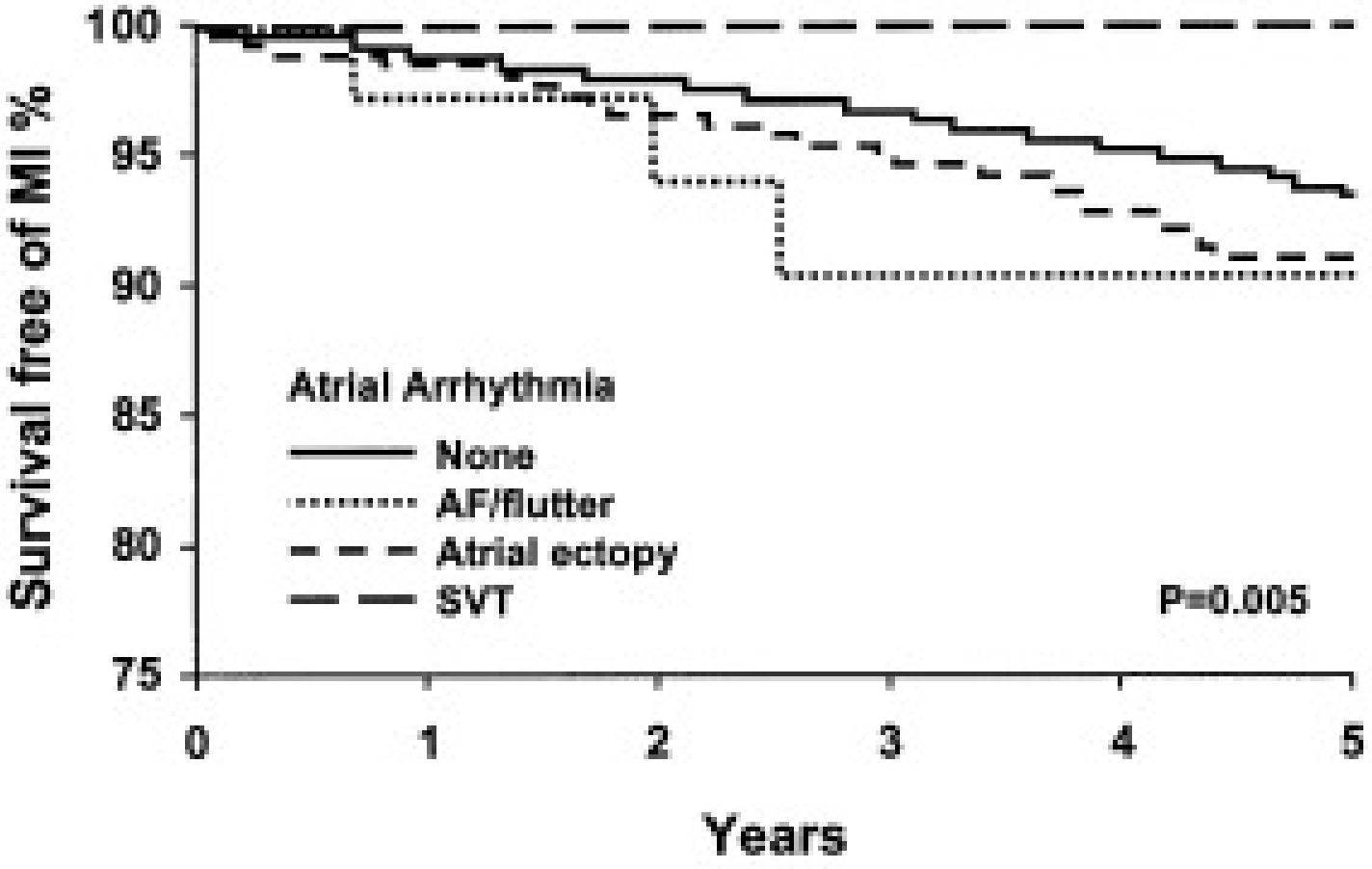

Figure 3. Kaplan-Meier analysis of the association of exercised-induced atrial arrhythmias and five-year survival free of myocardial infarction (MI). Abbreviations as in Figure 1.

Bunch TJ. JACC 2004:43;1236-40.

- Determination of ischemia localization and extention by MPS provide prognostic information and related to progression of LV dysfunction.
- Some other diagnostic findings including transient LV dilation and RV tracer uptake should be evaluated carefully.
- In addition to ischemia extention and LV systolic performance, important other prognostic risk factor is hypertension that should be effectively undercontrolled in addition to revascularization.
- Effective revascularization should be evaluated with associate target tissue recovery and used at least 5% improvement in ischemic burden for expectation of clinical benefit.

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