

11ο Πανελλήνιο Συνέδριο Υπέρτασης

Υπέρταση και Όργανα-Στόχος.
Οι Βλάβες, η Διάγνωση, η Θεραπεία

Η ΚΑΡΔΙΑ

Δ. Παπαδογιάννης

Καρδιολόγος

Αν. Καθηγητής

Α΄ Προπαιδευτική Παθολογική Κλινική

ΠΕΡΙΕΧΟΜΕΝΑ

- Υπερτροφία αριστερής κοιλίας
- Διάταση αριστερού κόλπου
- Μυοκαρδιακή ίνωση
- Διαστολική δυσλειτουργία
- Καρδιακή ανεπάρκεια με κανονικό κλάσμα εξώθησης
- Κολπική μαρμαρυγή

ΗΛΕΚΤΡΟΚΑΡΔΙΟΓΡΑΦΙΚΑ ΚΡΙΤΗΡΙΑ ΔΙΑΓΝΩΣΗΣ ΥΠΕΡΤΡΟΦΙΑΣ ΑΡ.ΚΟΙΛΙΑΣ

- Δείκτης Sokolow – Lyon

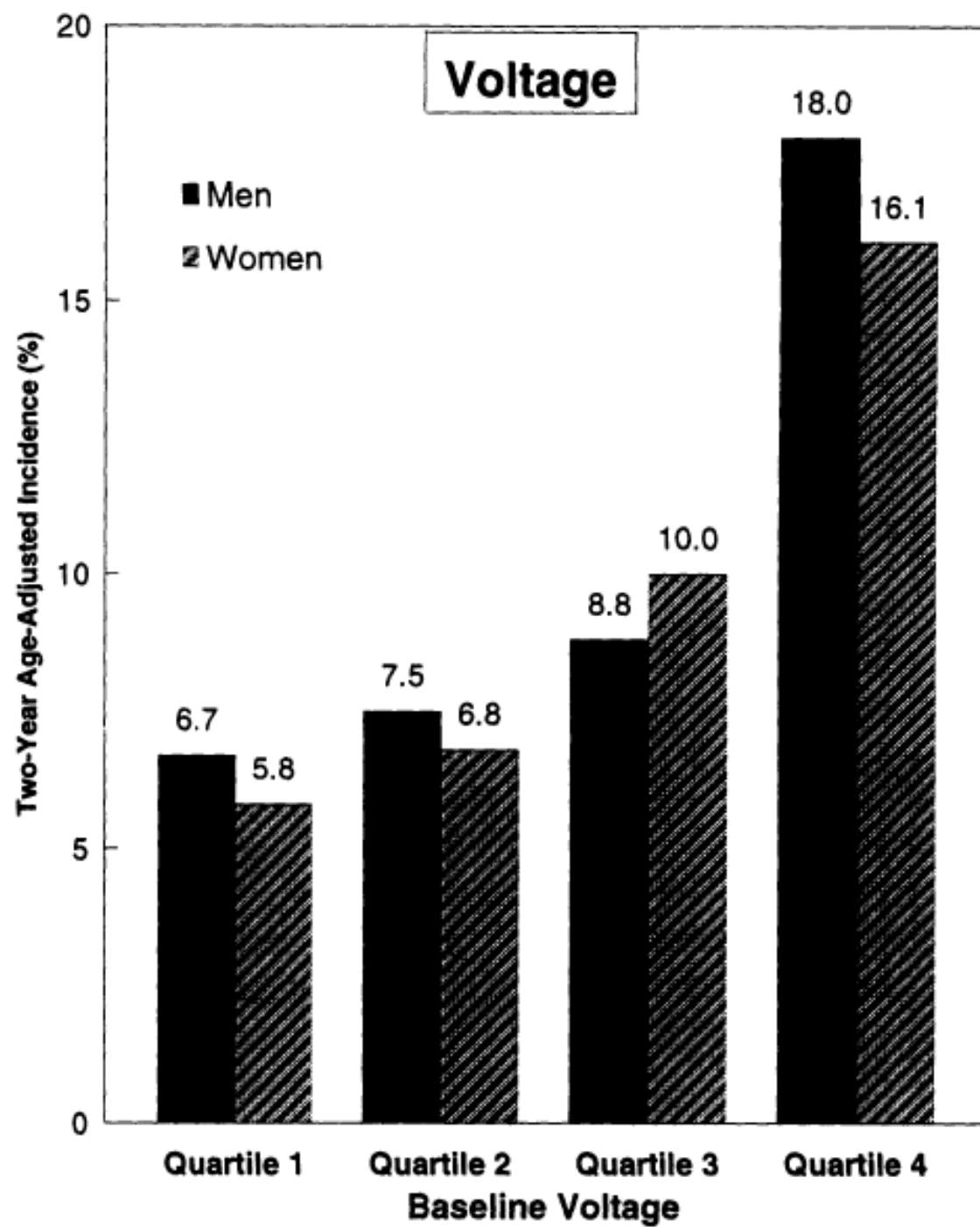
$$S_{V1} + R_{V5 \text{ ή } V6} > 3,5 \text{ mV}$$

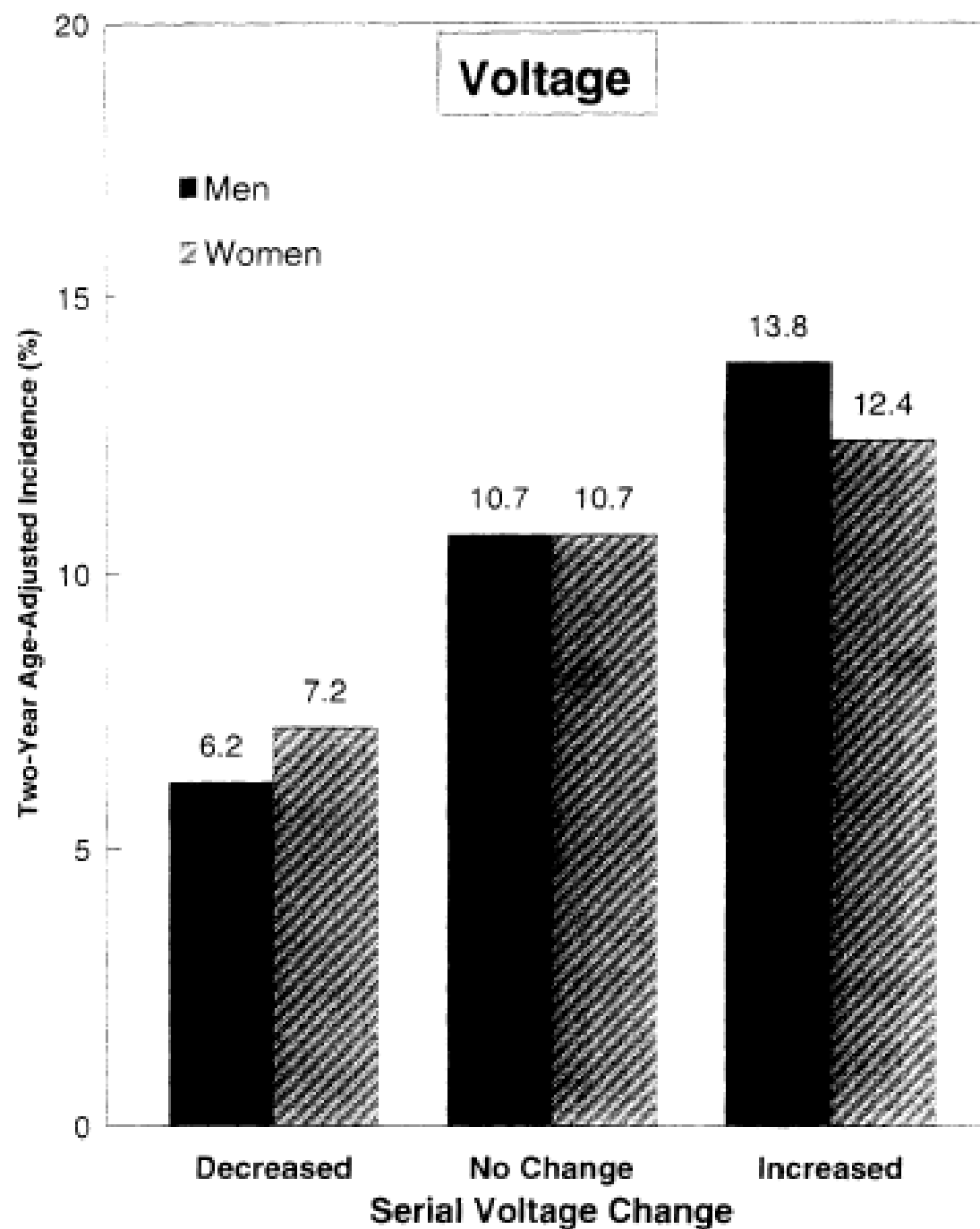
$$R_{V5 \text{ ή } V6} > 2,6 \text{ mV}$$

- Δείκτης Cornell

Άνδρες $R_{avL} + S_{V3} > 2,8 \text{ mV}$

Γυναίκες $R_{avL} + S_{V3} > 2,0 \text{ mV}$





ΥΠΕΡΗΧΟΓΡΑΦΙΚΑ ΚΡΙΤΗΡΙΑ ΔΙΑΓΝΩΣΗΣ ΥΠΕΡΤΡΟΦΙΑΣ ΑΡΙΣΤΕΡΗΣ ΚΟΙΛΙΑΣ

- Άνδρες $\Delta.Μ.Α.Κ. > 125 \text{ gr/m}^2$
- Γυναίκες $\Delta.Μ.Α.Κ. > 110 \text{ gr/m}^2$

ΤΥΠΟΙ ΥΠΕΡΤΡΟΦΙΑΣ ΑΡΙΣΤΕΡΗΣ ΚΟΙΛΙΑΣ

- Συγκεντρική: λόγος τοιχώματος/ακτίνα $\geq 0,42$
(↑μάζα αρ. κοιλίας)
- Έκκεντρη: λόγος τοιχώματος/ακτίνα $< 0,42$
(↑μάζα αρ. κοιλίας)
- Συγκεντρική
αναδιαμόρφωση: λόγος τοιχ/τος/ακτίνα $\geq 0,42$
(φυσιολογική μάζα αρ. κοιλίας)

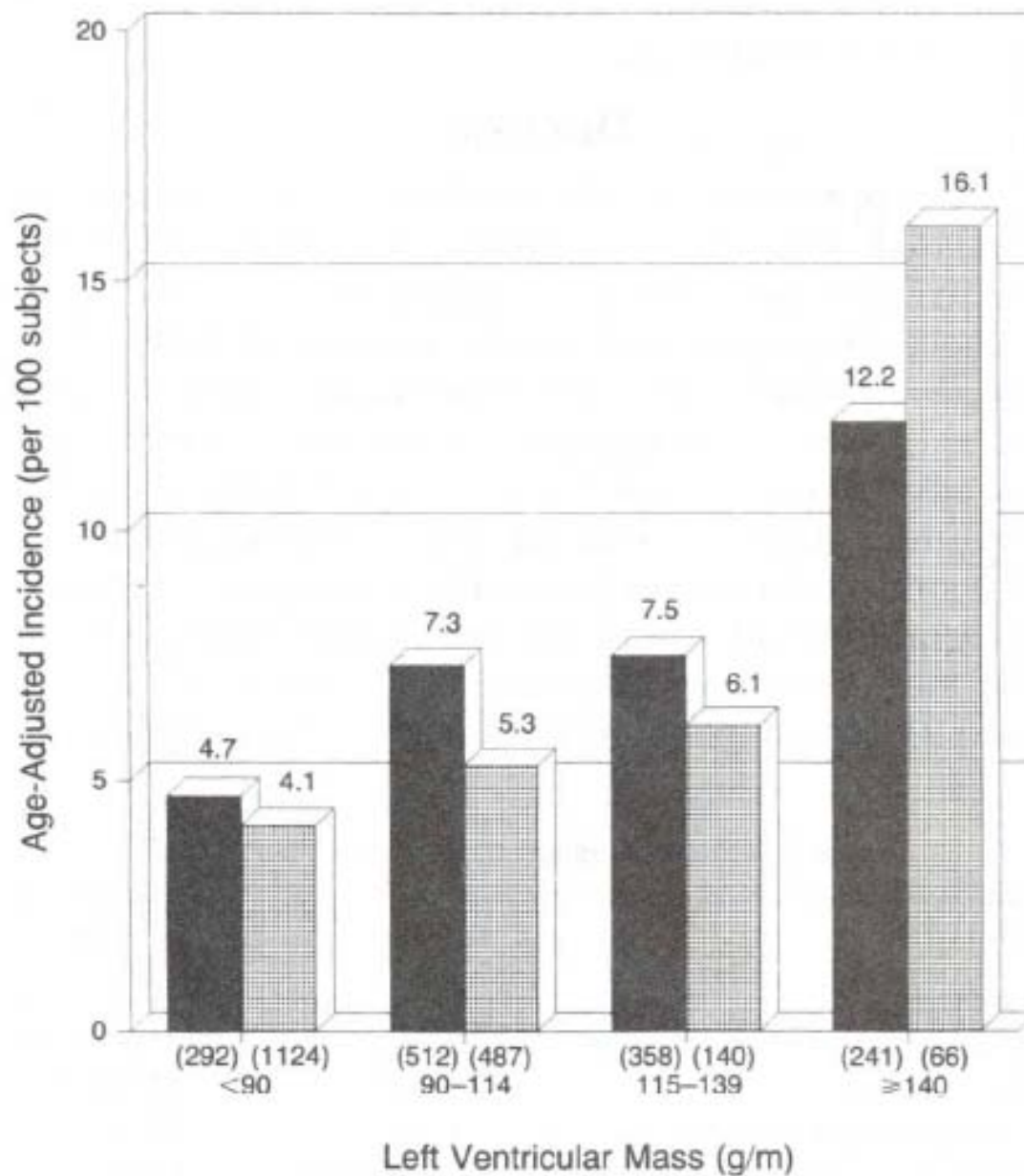


Figure 1. Four-Year Age-Adjusted Incidence of Cardiovascular Disease, According to Left Ventricular Mass (Corrected for Height).

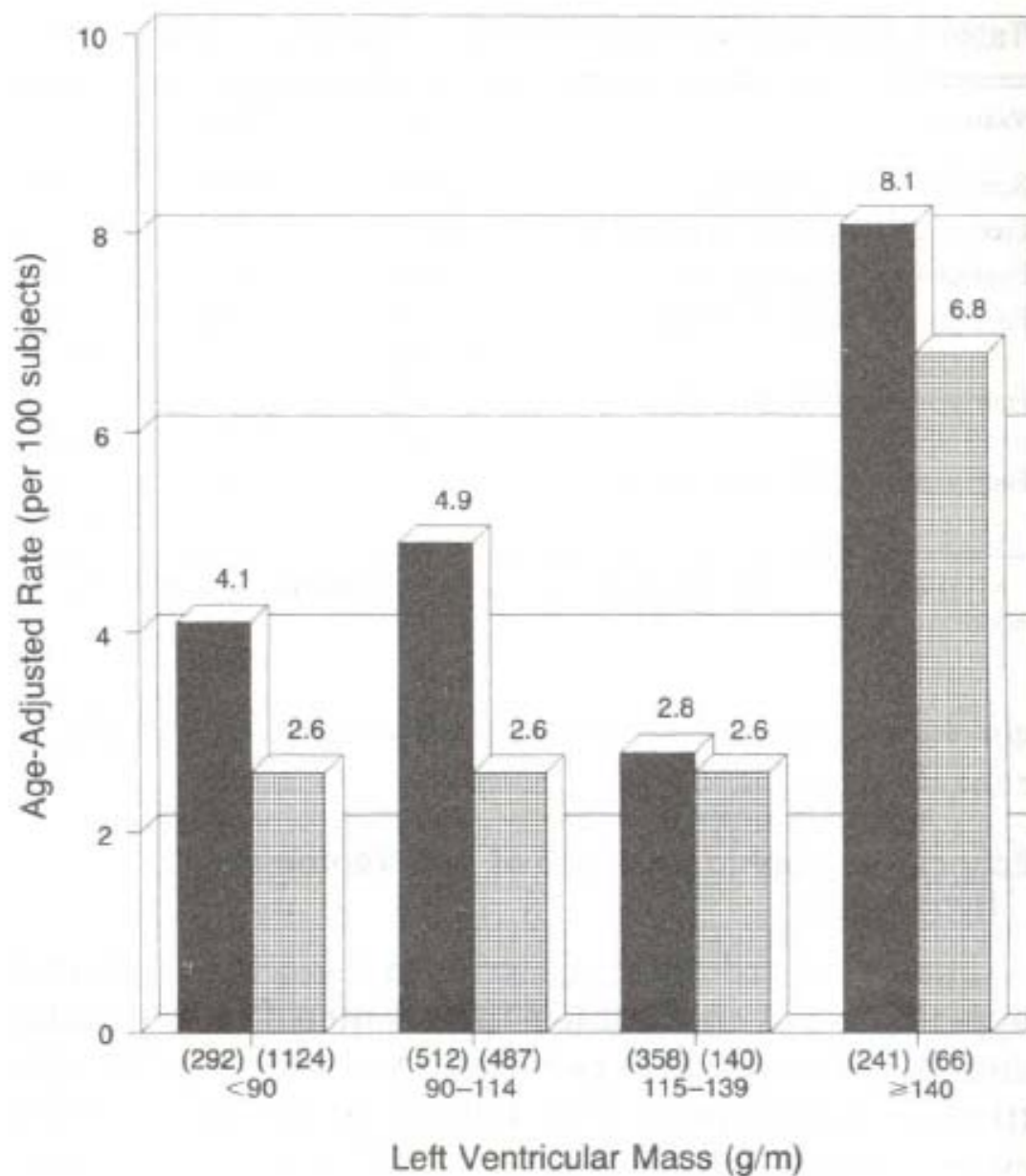
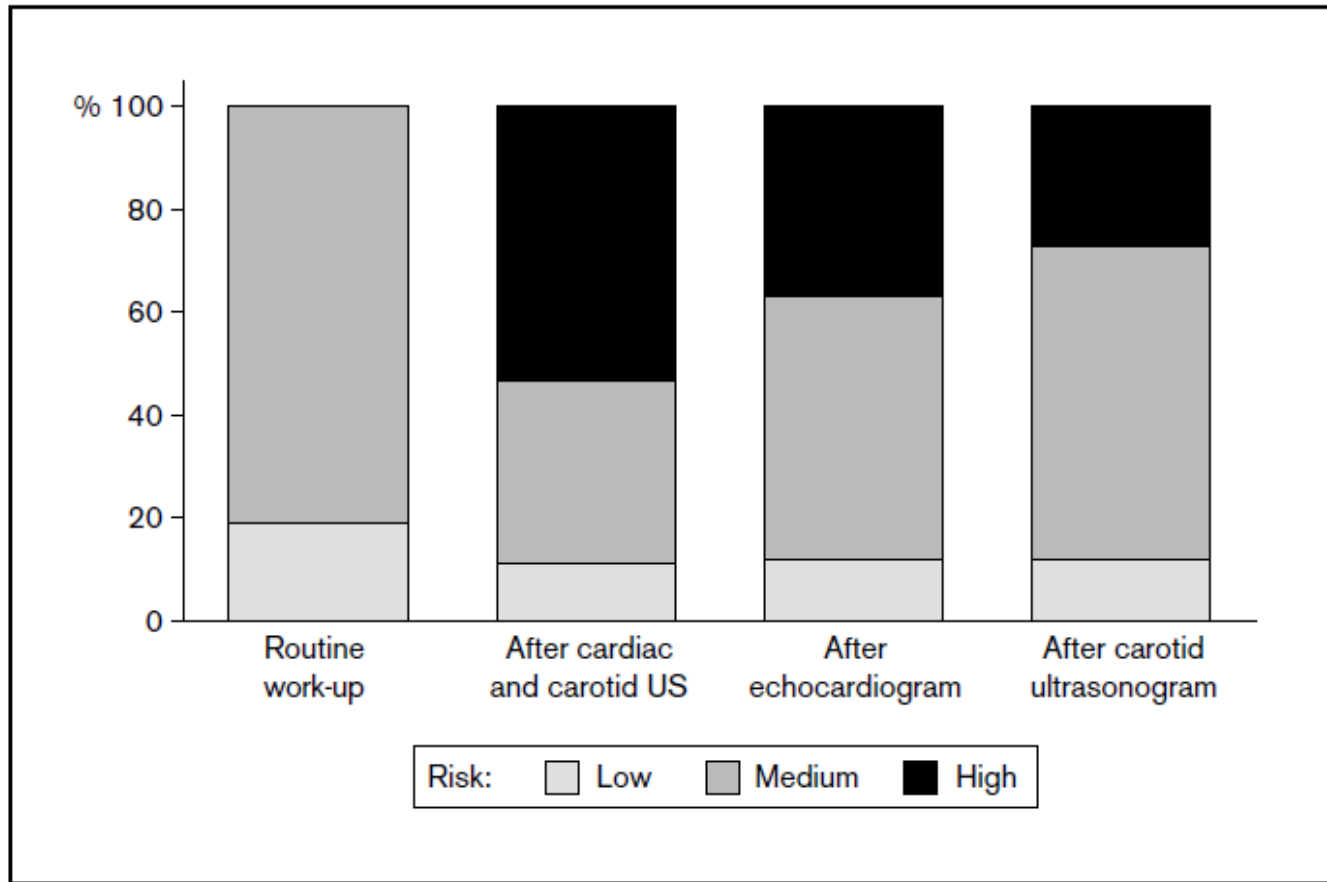
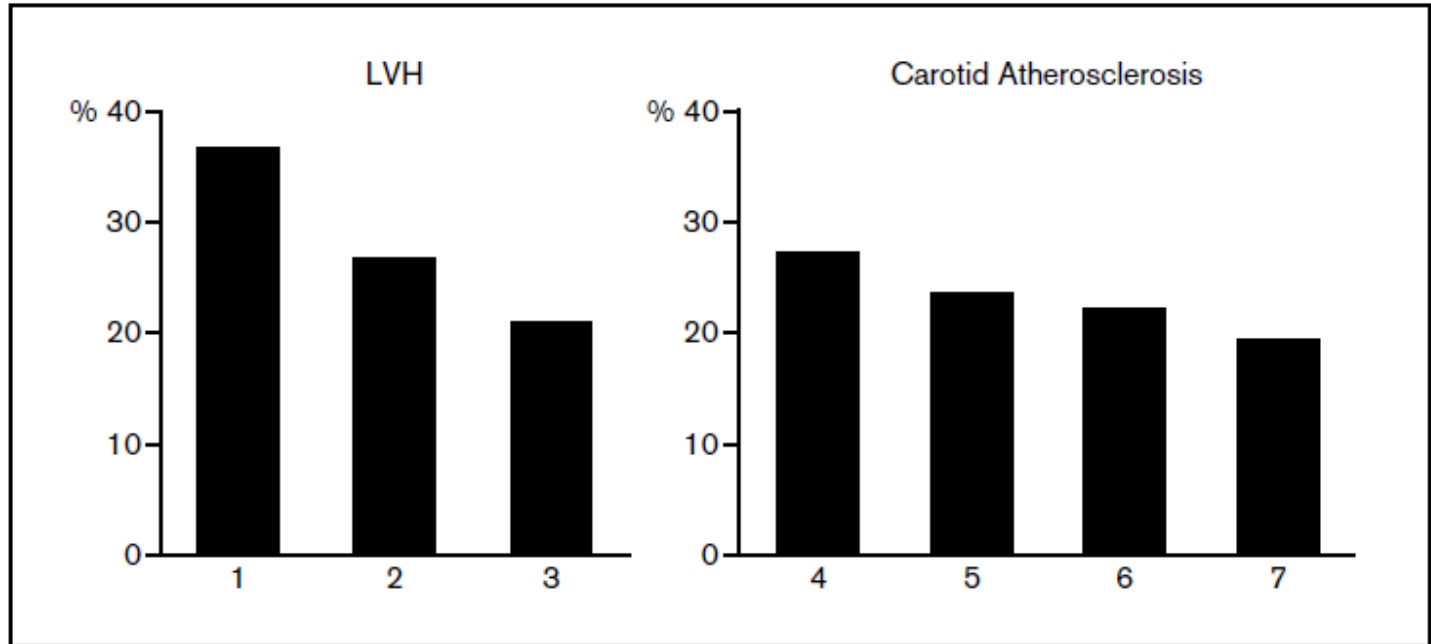


Figure 2. Four-Year Age-Adjusted Rate of Death from All Causes, According to Left Ventricular Mass (Corrected for Height).



Stratification of 1074 patients by global level of cardiovascular risk after the routine work-up and after assessment of target-organ damage by echocardiography and carotid ultrasonography (together or separately). US, ultrasonography.



Prevalence of left ventricular hypertrophy and carotid structural alterations according to different diagnostic criteria. 1, left ventricular mass index (LVMI) $\geq 120/100$ g/m² (men/women); 2, LVMI $\geq 125/110$ g/m²; 3, LVMI $\geq 125/125$ g/m²; 4, carotid plaque, or carotid intima-media thickness (IMT) > 0.8 mm, or both; 5, carotid plaque, or carotid IMT > 0.9 mm, or both; 6, carotid plaque, or carotid IMT > 1.0 mm, or both; 7, plaque only.

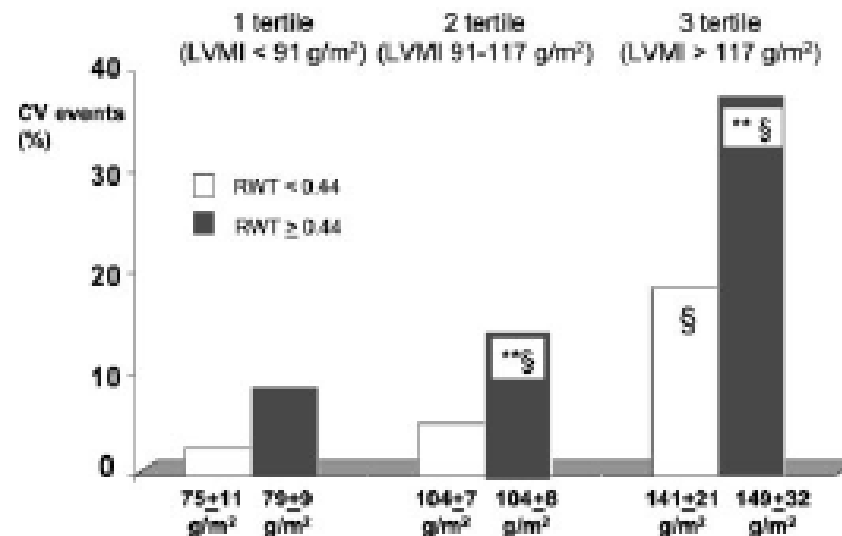
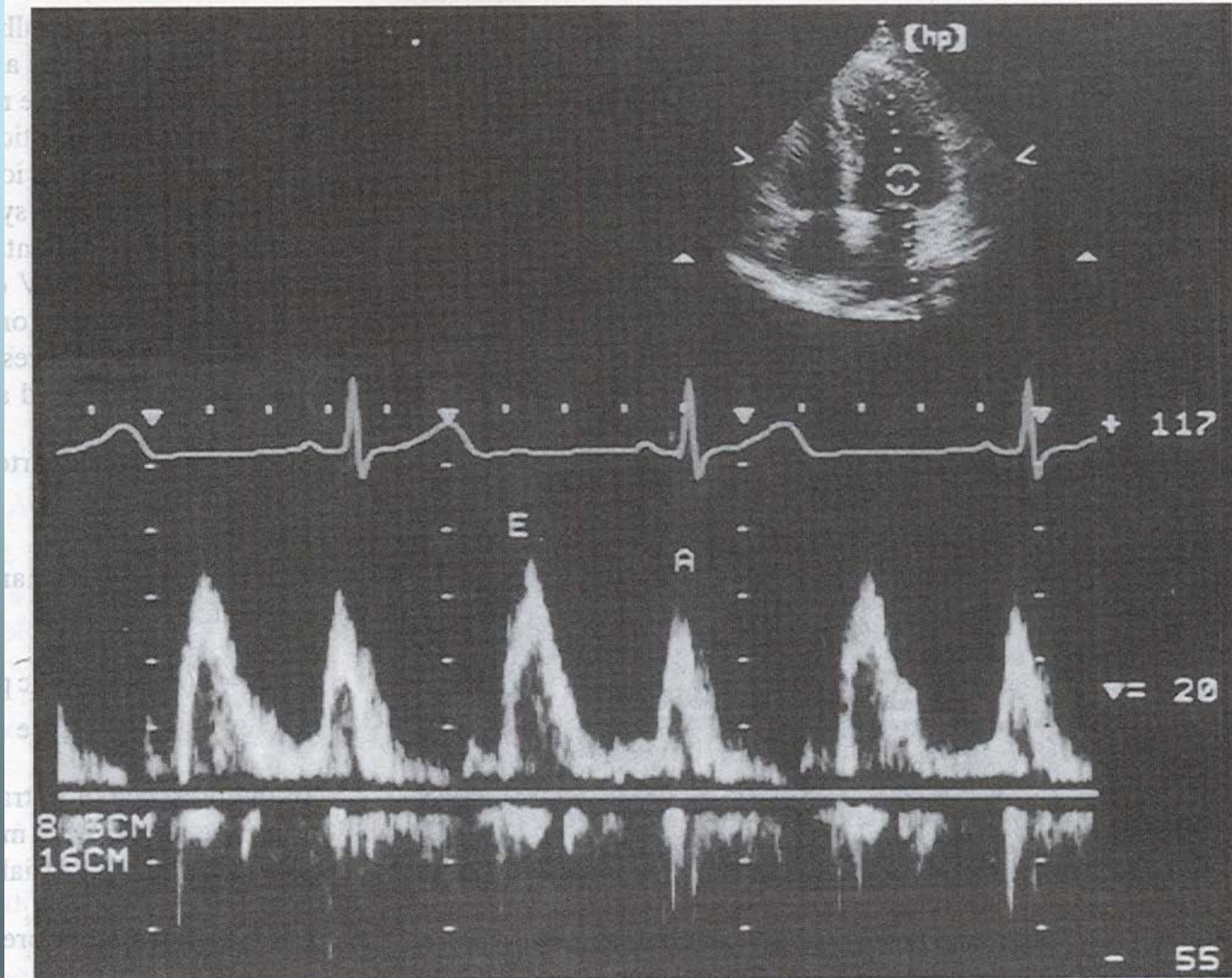
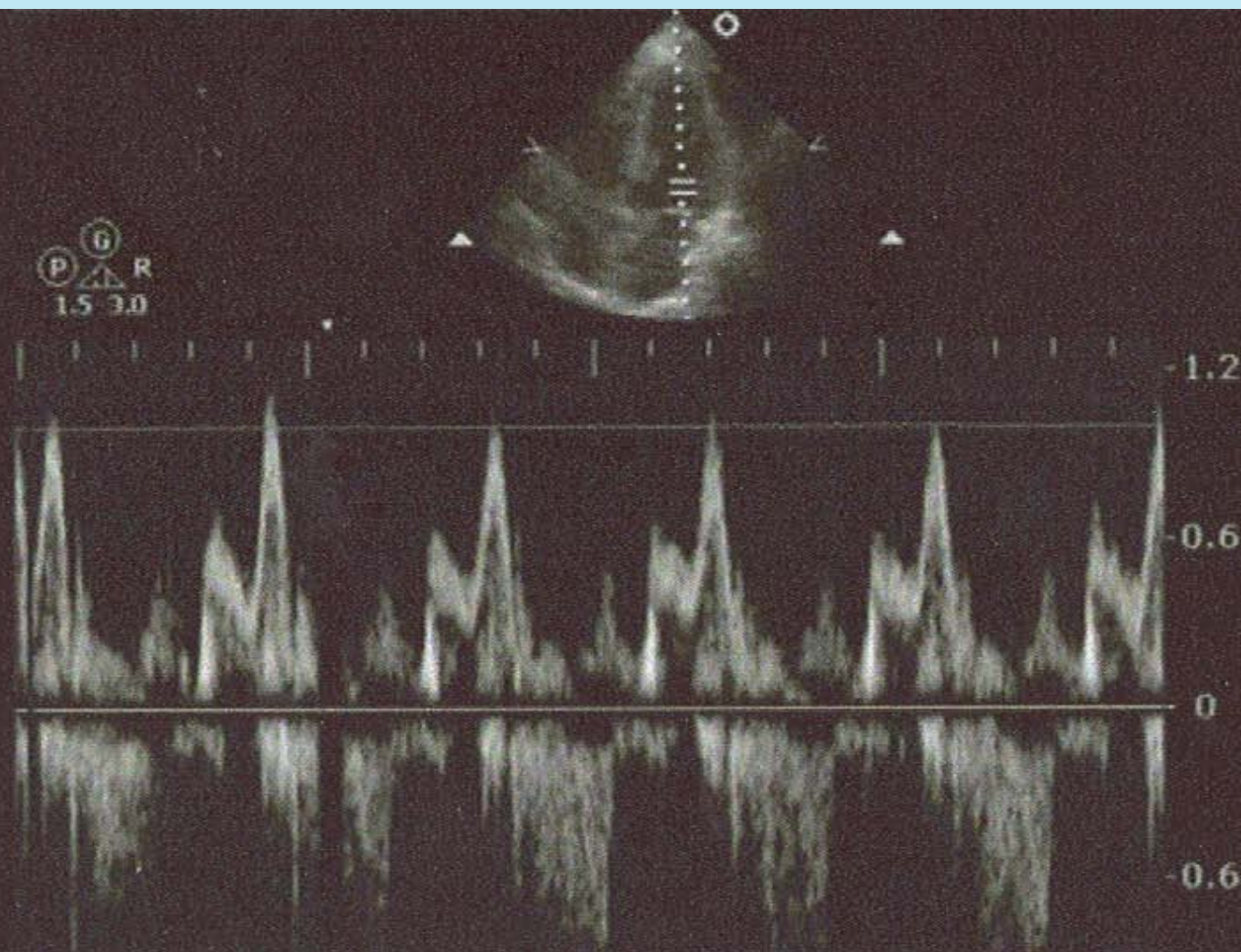


Figure 2. Incidence of cardiovascular events in patients with concentric geometry compared with those with eccentric geometry in the first tertile (4/35 vs 5/109; OR: 2.68; 95% CI: 0.68 to 10.61; $P=0.146$) and reached statistical significance in the second tertile (9/32 vs 10/114; OR: 4.070; 95% CI: 1.49 to 11.14; $P=0.004$) and in the third tertile (22/46 vs 21/100; OR: 3.45; 95% CI: 1.62 to 7.32; $P=0.001$). Incidence of cardiovascular events increases progressively from the first to the third tertile of left ventricular mass index at follow-up and reaches statistical significance in the group of patients in the second tertile with concentric geometry and in both groups of patients in the third tertile, compared with the group of patients of the first tertile with eccentric geometry ($P<0.001$). **vs eccentric geometry; §vs first tertile with eccentric geometry.



(P) (G) R
1.5 3.0



ADULT 3
S3-1
MI 1.6
TIS 1.6

H2 Gn 45

PW
1.9 MHz
Gn 50
9.1 cm
Angle 0

+
m
/ s
-

16cm

Waveform
Off

Map
A

Chroma
Off

Compress
6

Reject
4

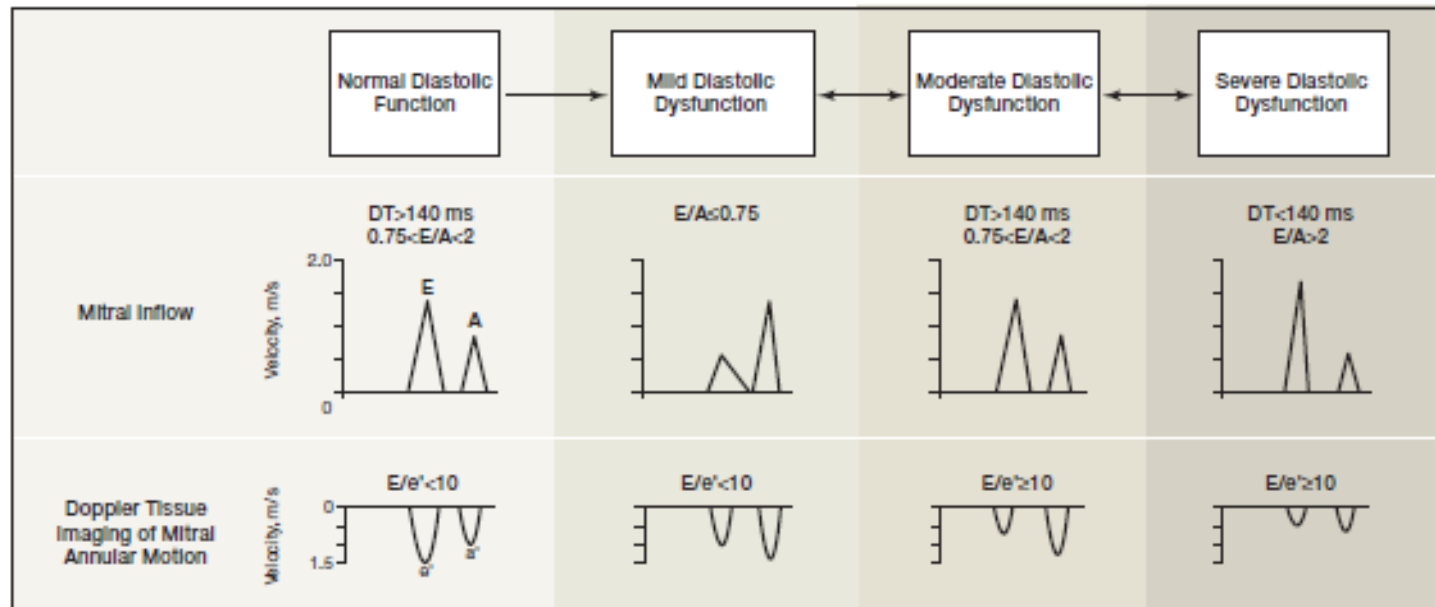
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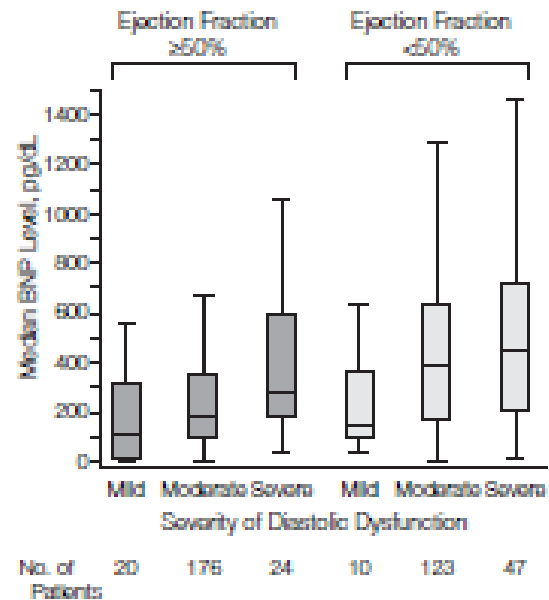
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Figure 1. Echocardiography-Doppler Criteria for Assessment of Diastolic Function



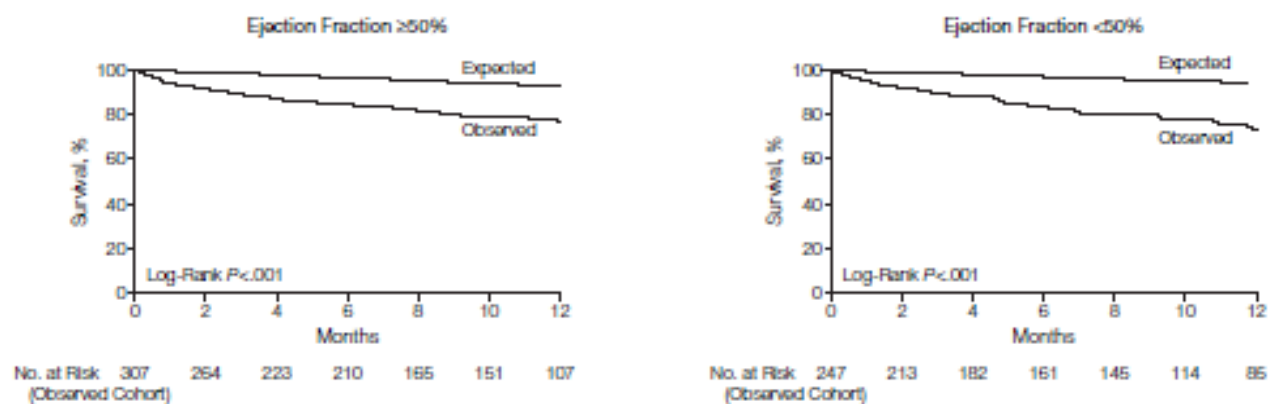
E indicates early peak mitral inflow velocity; A, late peak mitral inflow velocity, DT, deceleration time of the E-wave; e' , velocity of annulus early diastolic motion.

Figure 2. Median Brain Natriuretic Peptide (BNP) Levels by Ejection Fraction Categories



Each box displays the median, 75th percentile, and 25th percentile values; horizontal bars represent 1.5 times the interquartile range.

Figure 3. Expected and Observed Survival by Ejection Fraction Category



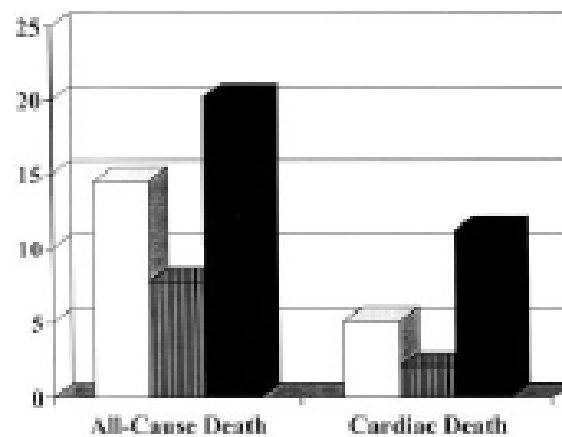


Figure 1. Incidence of all-cause and cardiac death among SHS participants with E/A <0.6 (open bars), 0.6 to 1.5 (striped bars), and >1.5 (closed bars).

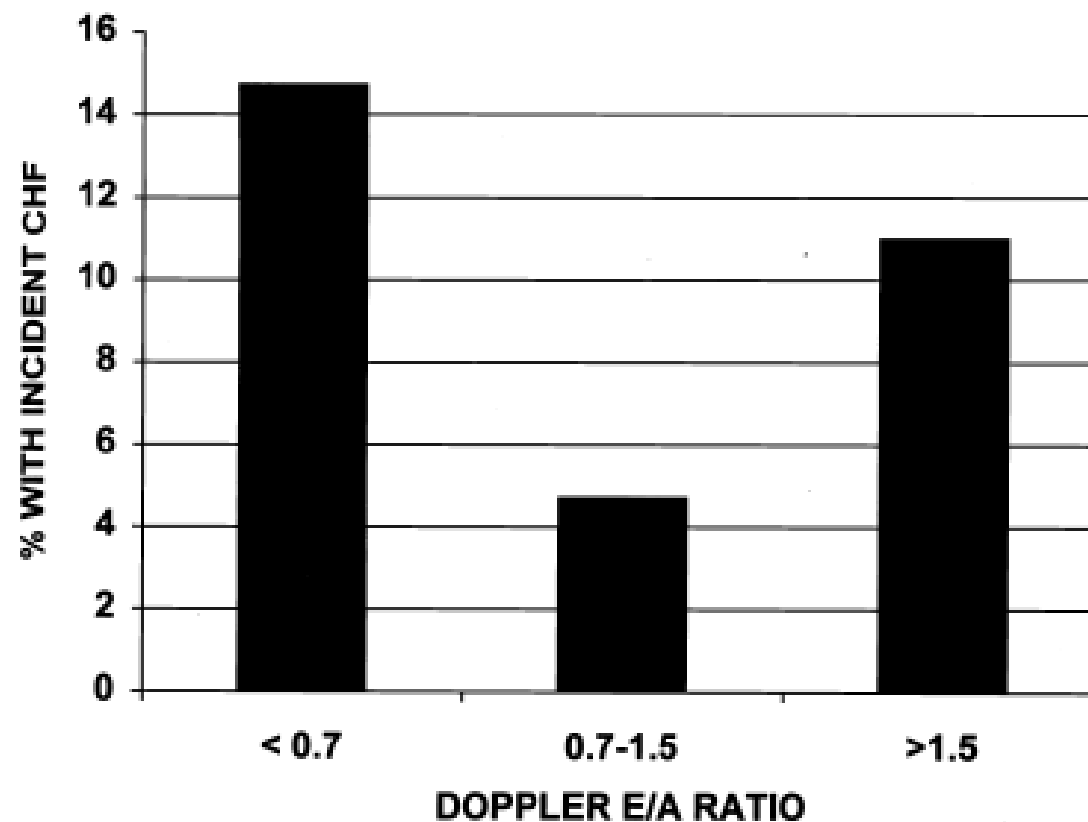


Figure 1. Unadjusted incident congestive heart failure (CHF) rates by Doppler E/A ratio. Incident CHF is highest at the extreme values of this ratio.

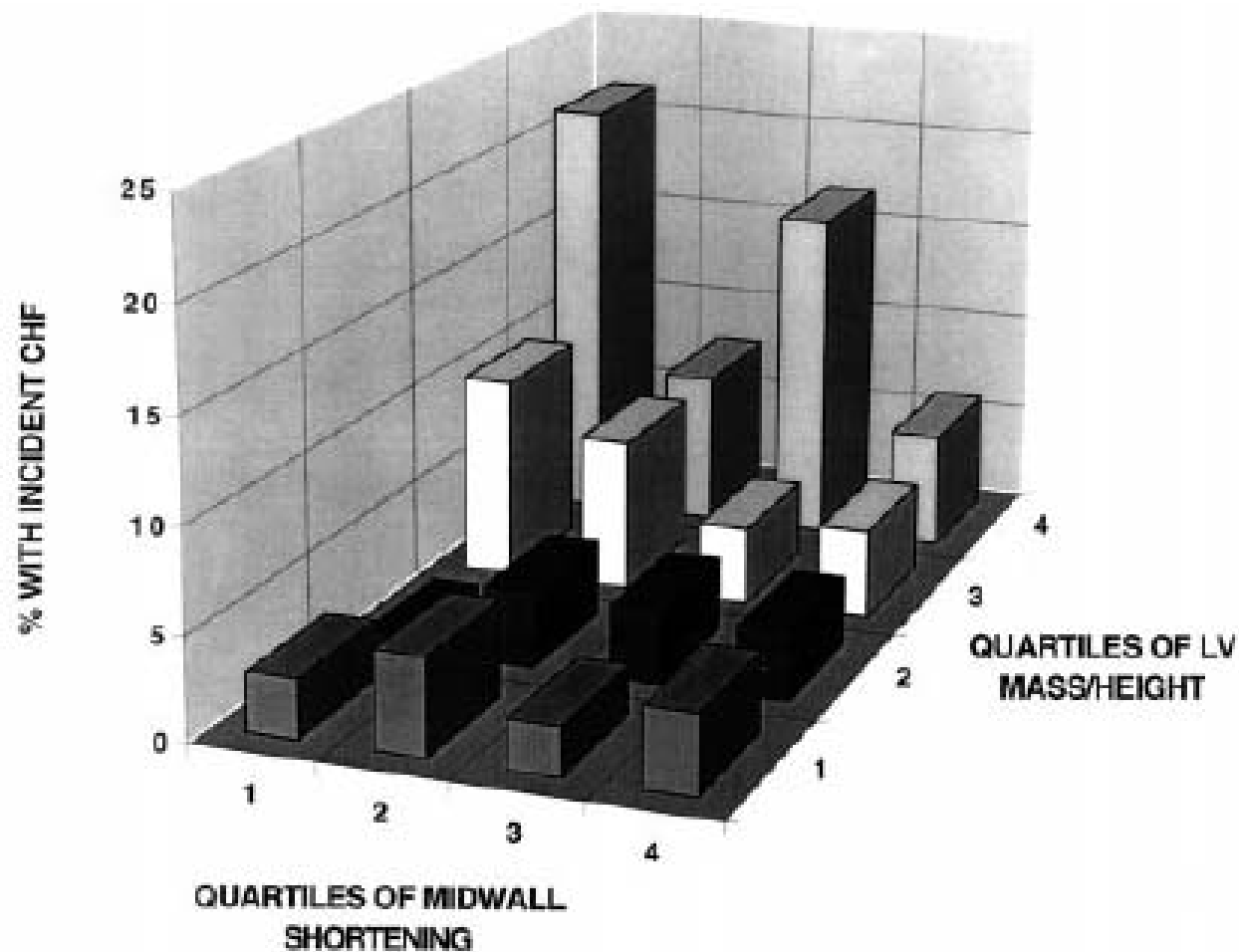


Figure 2. Interaction between quartiles of left ventricular (LV) mass index and stress-corrected midwall shortening. Highest incidence rates are in the subgroup with lowest midwall shortening and highest LV mass index. CHF = congestive heart failure.

In-hospital Care, Complications, and Outcomes.

Variable	Reduced Ejection (<40%) (N=1570)	Preserved Ejection Fraction (>50%) (N=880)	P value
30-Day mortality	112 (7,1)	47 (5,3)	0,08
1-Yr mortality	400 (25,5)	195 (22,2)	0,07
30-Day readmission for heart failure	73 (4,9)	38 (4,5)	0,66
1yr Readmission for heart failure	240 (16,1)	114 (13,5)	0,09
30Day mortality or readmission for heart failure	182 (11,6)	83 (9,4)	0,10
1yr mortality or readmission for heart failure	566 (36,0)	274 (31,1)	0,01

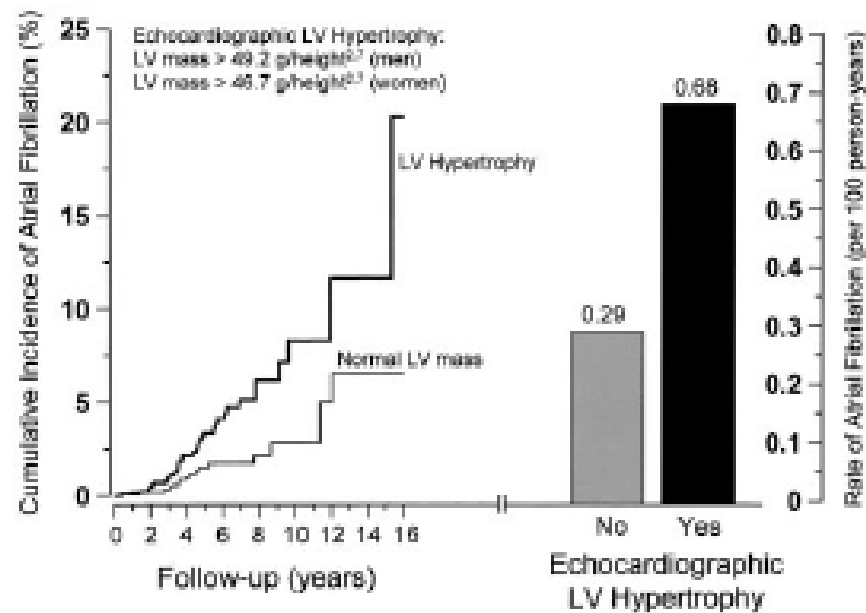


Figure 1. Incidence of at least 1 episode of AF in hypertensive subjects in sinus rhythm sorted by LV hypertrophy at echocardiography.

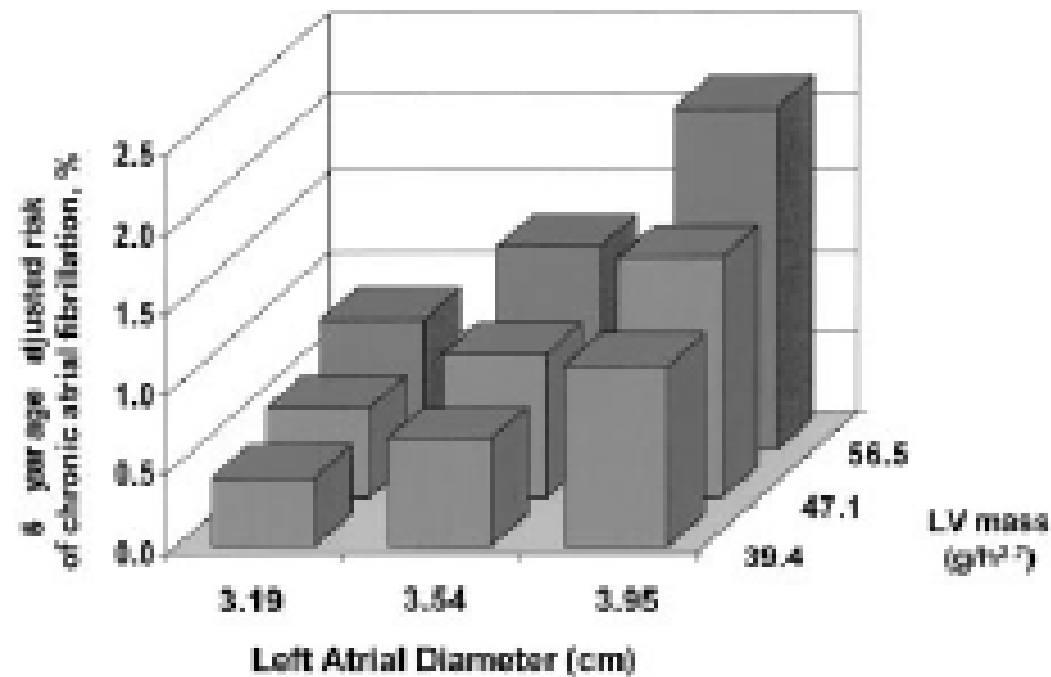


Figure 2. Age-adjusted 5-year risk of chronic AF in hypertensive subjects in sinus rhythm. Reported values are the 3 division points for quartiles.

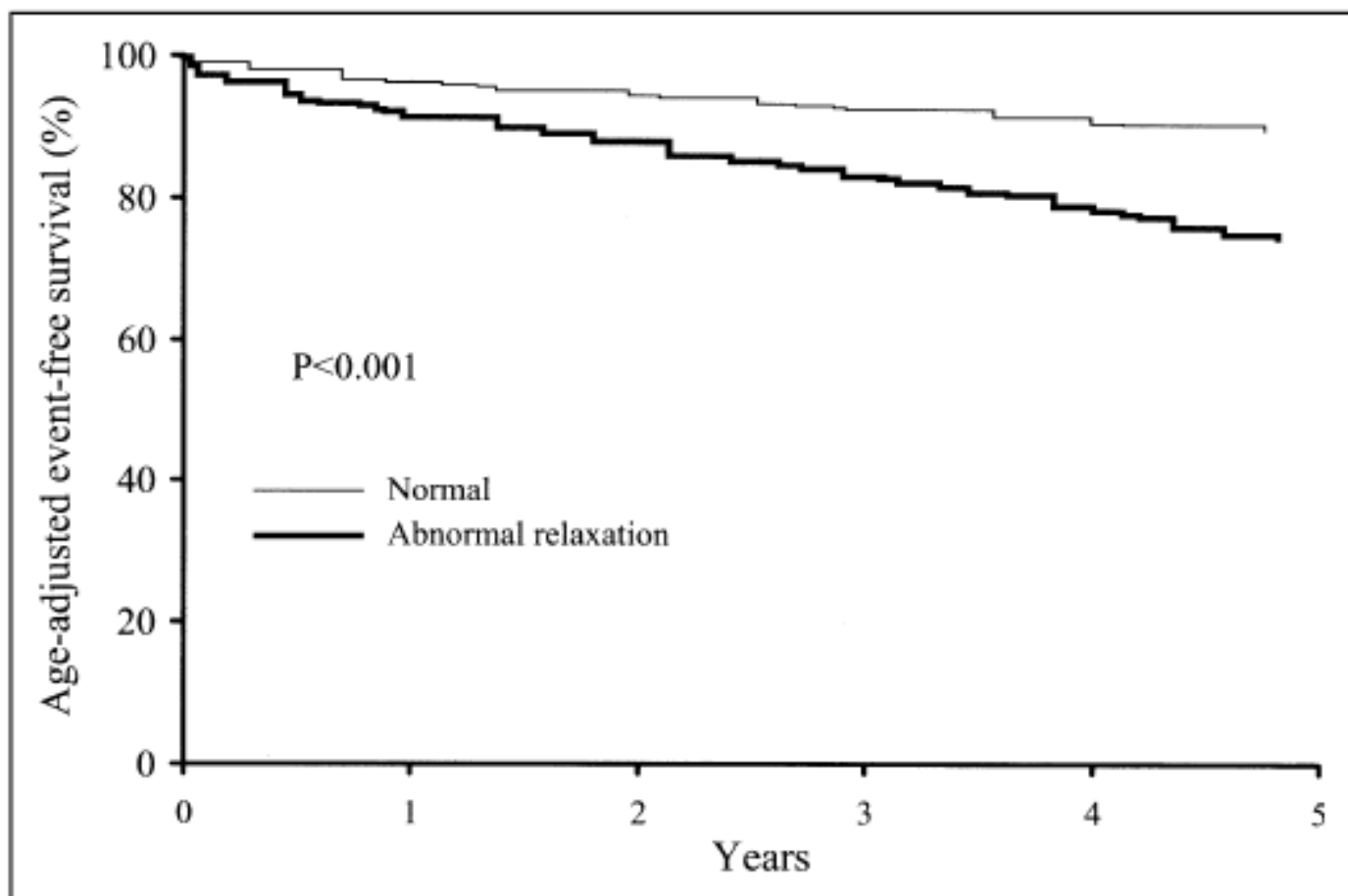


FIGURE 1. Age-adjusted Kaplan-Meier estimates of cumulative survival free of AF and CHF in patients with abnormal LV diastolic relaxation compared with those with normal diastolic filling.

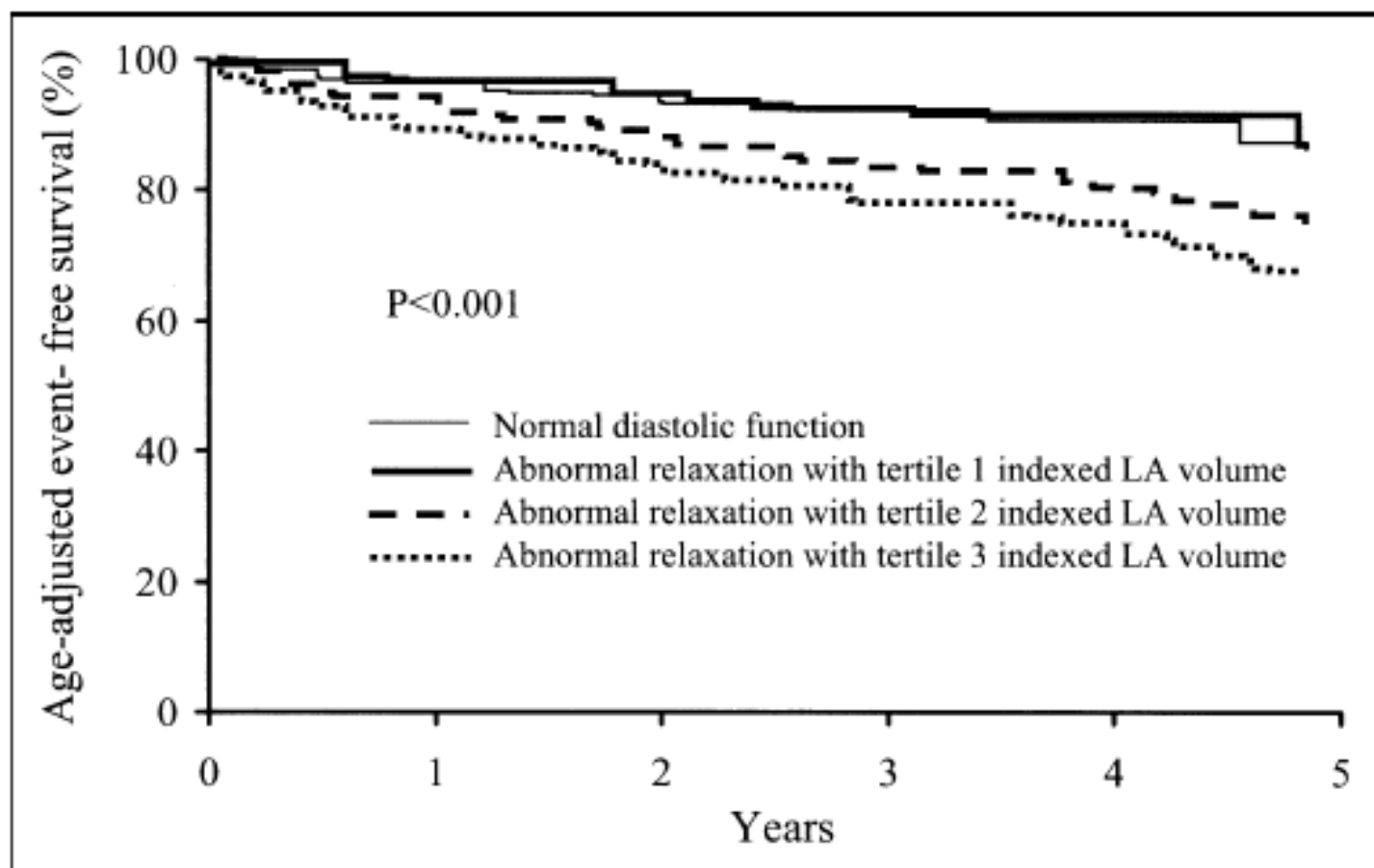
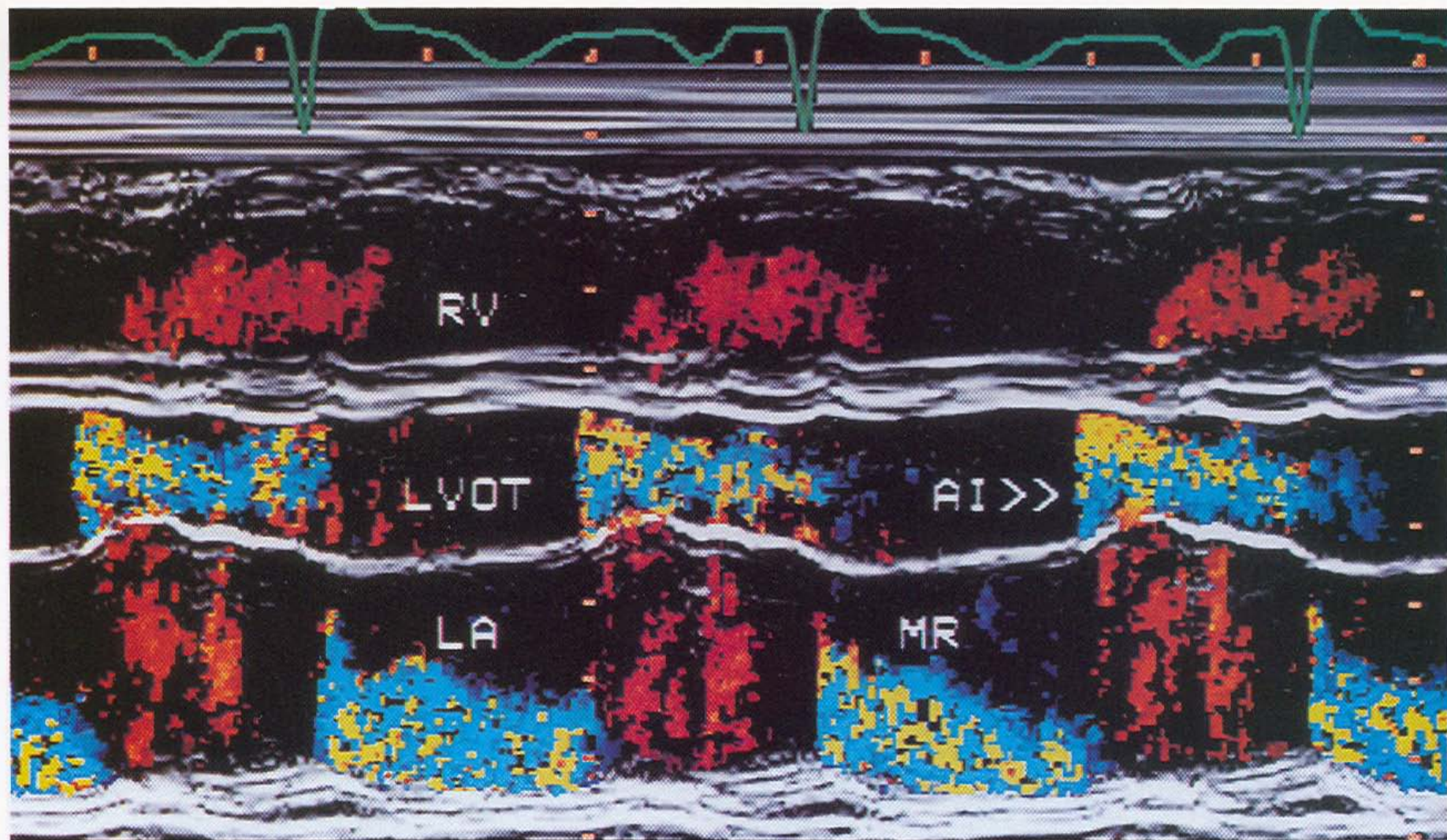


FIGURE 2. Age-adjusted Kaplan-Meier estimates of survival free of AF and CHF in patients with normal LV diastolic filling and those with diastolic relaxation abnormality stratified by tertiles of indexed LA volume.

ΗΛΕΚΤΡΟΚΑΡΔΙΟΓΡΑΦΙΚΑ ΚΡΙΤΗΡΙΑ ΔΙΑΓΝΩΣΗΣ ΥΠΕΡΤΡΟΦΙΑΣ ΑΡ.ΚΟΛΠΟΥ

	% Αληθώς (+)	% Αληθώς (-)
Διάρκεια αρνητικού τελικού τμήματος P σε V1 >0,04 sec	83	80
Μέγεθος αρνητικού τελικού τμήματος P σε V1>0,1mV	60	93



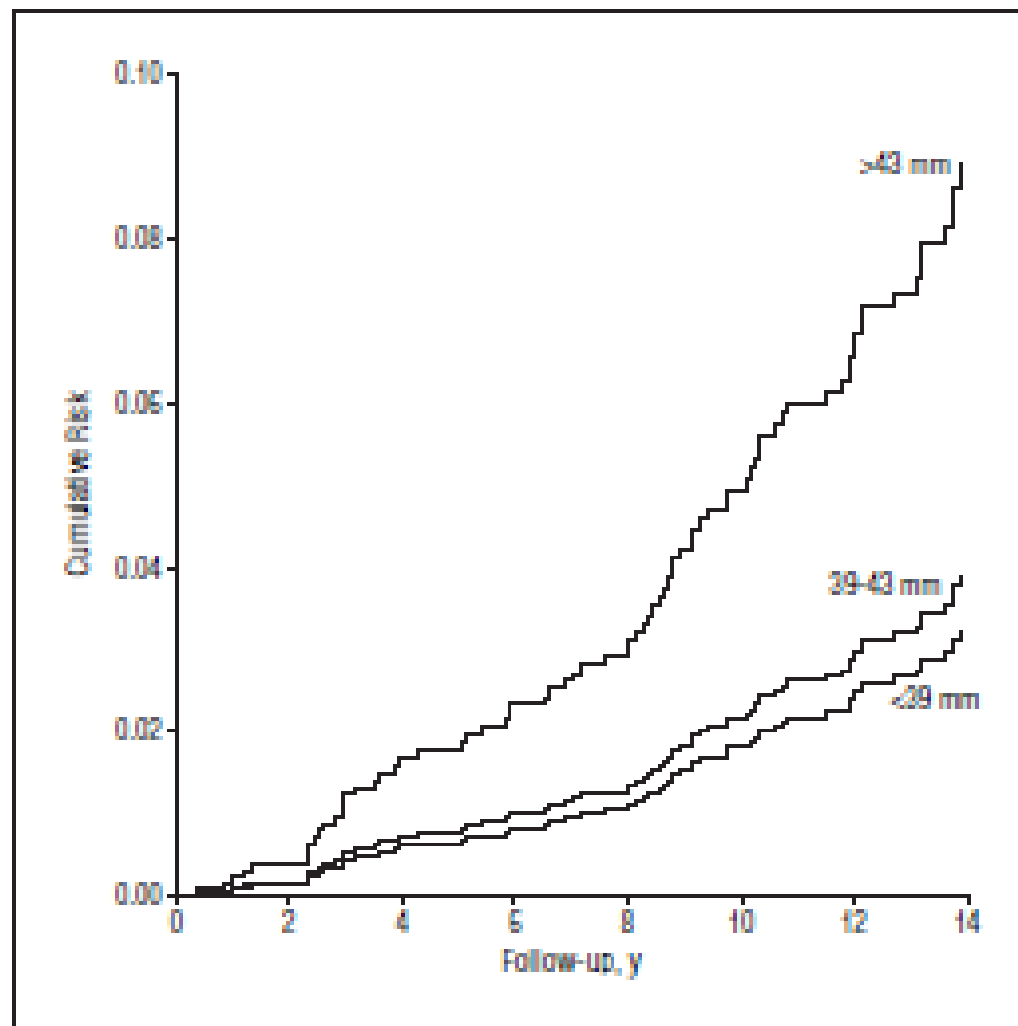


Figure. Risk factor-adjusted cumulative curves for all-cause mortality according to left atrium diameter (<39 , $39-43$, and >43 mm).

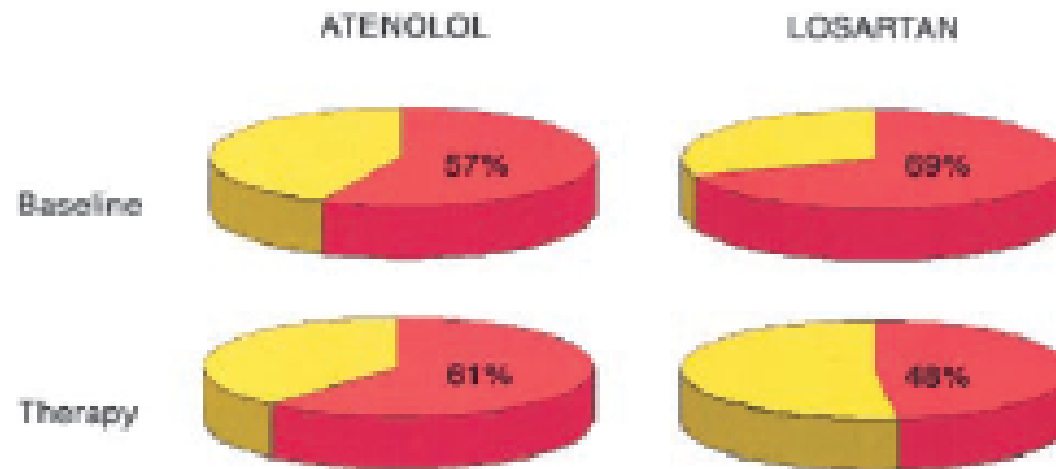


Figure 2. Prevalence of excessive fibrosis (defined as BB ≥ 100 color levels) in atenolol- and losartan-treated patients at baseline and after 36-week treatment. Note prevalence of excessive fibrosis was unchanged by atenolol and decreased by losartan.

						Between-Treatment
Marker/ Treatment		Baseline	Week 36	% Change		Differences
	n	Median (q25, q75)	Median (q25, q75)	Median	P	P
PIP, $\mu\text{g/L}$						
Losartan	108	121.0 (100.0, 143.0)	111.0 (95.0, 136.0)	−7.5	NS	0.863
Atenolol	97	120.0 (97.0, 142.0)	113.0 (91.0, 133.0)	−2.7	NS	
CITP, $\mu\text{g/L}$						
Losartan	108	3.43 (2.83, 4.33)	3.46 (2.60, 4.36)	−2.5	NS	0.310
Atenolol	96	3.40 (2.72, 3.94)	3.11 (2.37, 3.80)	−6.8	NS	
PIP to CITP ratio						
Losartan	108	35.3 (26.3, 46.5)	32.3 (24.4, 42.2)	−7.4	NS	0.432
Atenolol	96	34.9 (27.5, 43.5)	35.5 (27.7, 49.2)	1.2	NS	
PIIIP, $\mu\text{g/L}$						
Losartan	108	3.35 (2.59, 4.10)	3.33 (2.37, 4.48)	−5.0	NS	0.181
Atenolol	97	3.20 (2.49, 3.80)	3.33 (2.50, 4.41)	11.5	0.01	

Values are expressed as medians and lower and upper quartiles (q25,q75). Percent changes from baseline are also expressed as medians. *P* values for within-group changes: Wilcoxon signed rank test; *P* values for between-group comparison: Wilcoxon rank-sum test.

ΘΕΡΑΠΕΙΑ ΚΑΡΔΙΑΚΗΣ ΑΝΕΠΑΡΚΕΙΑΣ ΜΕ ΦΥΣΙΟΛΟΓΙΚΟ ΚΛΑΣΜΑ ΕΞΩΘΗΣΗΣ

- Ρύθμιση ΑΠ – θεραπεία πιθανής ΙΗD.
- Χρησιμοποιούνται διουρητικά – φάρμακα του άξονα ΡΑΑ, βήτα αποκλειστές.
- Λίγες μελέτες (CHARM-Preserved, PEP –CHF) δεν έδειξαν σαφή αποτέλεσμα σε νοσηρότητα και θνησιμότητα

ΣΥΜΠΕΡΑΣΜΑΤΑ

- Η καρδιά αποτελεί πρώιμο στόχο της υπέρτασης.
- Οι συνέπειες εκδηλώνονται ως υπερτροφία ΑΚ, αυξημένη ίνωση μυοκαρδίου- διαστολική δυσλειτουργία και ανεπάρκεια, διάταση αριστερού κόλπου – κοιλιακή μαρμαρυγή.
- Η έγκαιρη διάγνωση και ρύθμιση υπέρτασης, τα σημαντικότερα στοιχεία
- Η θεραπεία της HFPEF δεν είναι πολύ αποτελεσματική