

THE DIFFICULT PROBLEM  
OF LOW GRADIENT LOW EF  
AS

# 62 Y/O MAN

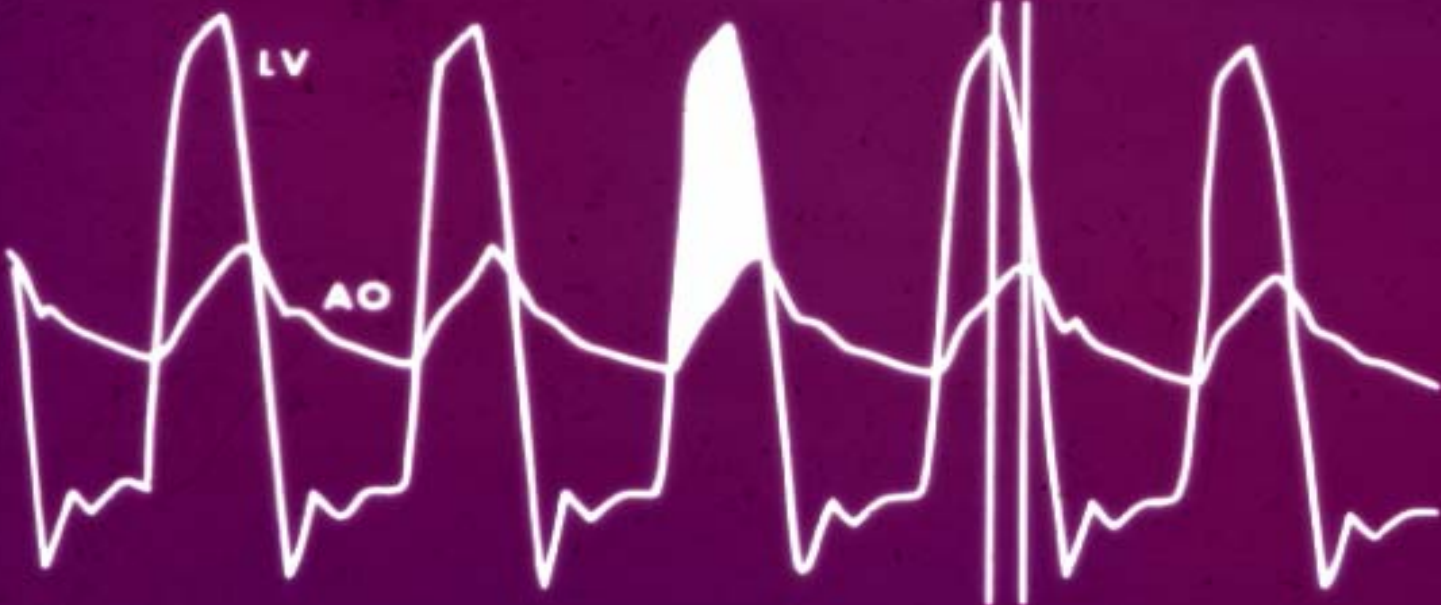
- NYHA III DYSPNEA
- BP 90/65
- 2/6 SEM; MODESTLY DELAYED CAROTIDS
- MEAN GRAD 19 mmHg AVA 0.7cm<sup>2</sup>

EKG



LV

AO



200

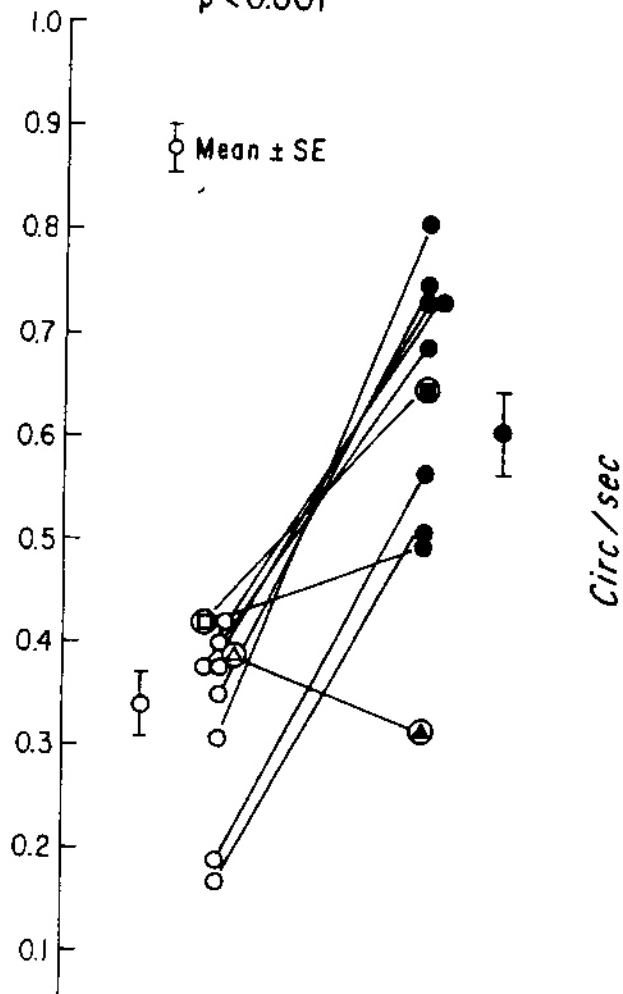
100

0

mm Hg

Ejection Fraction

$p < 0.001$

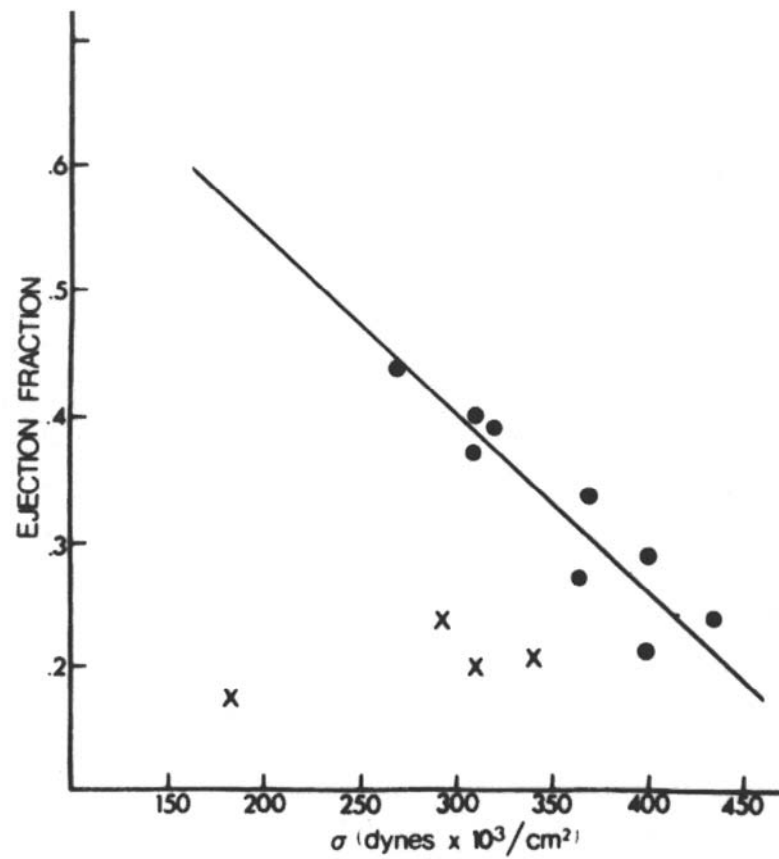


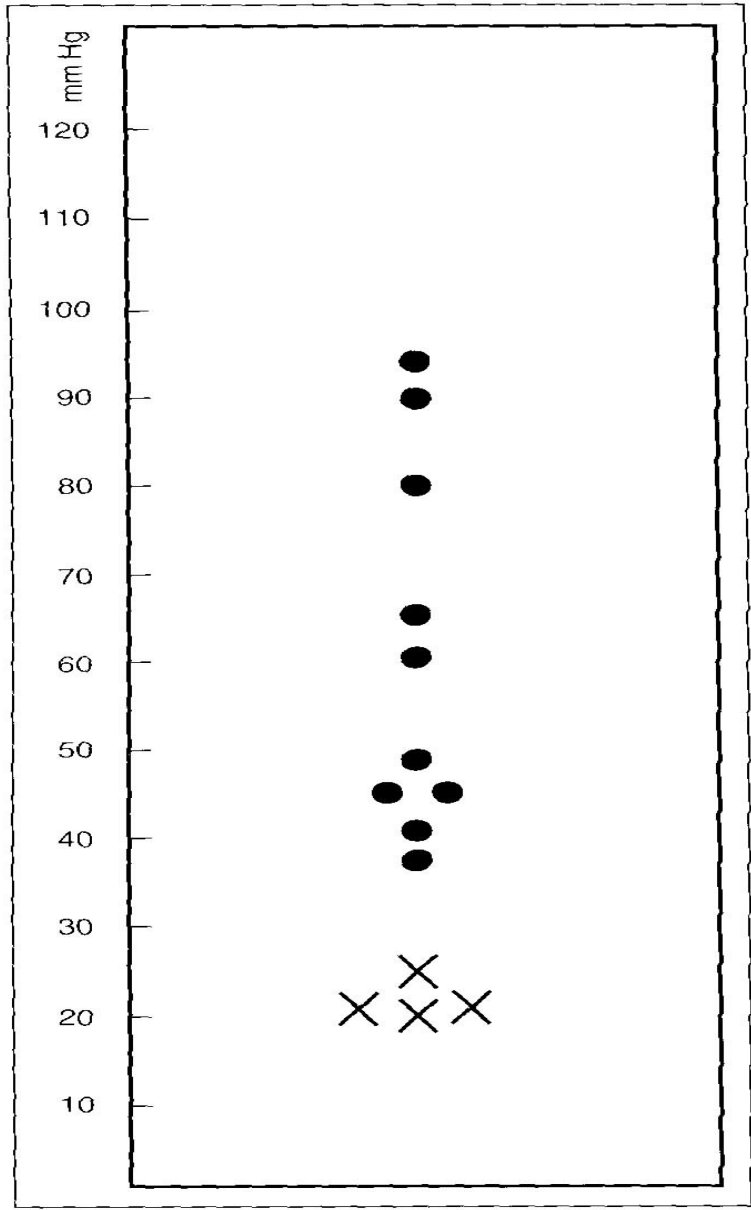
TRIAD

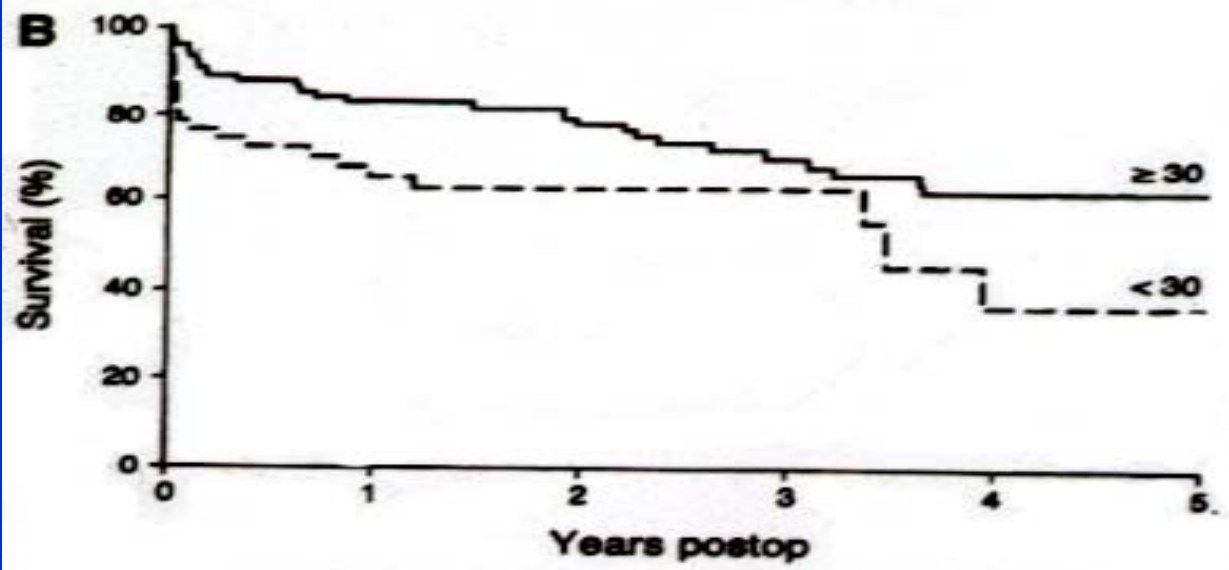
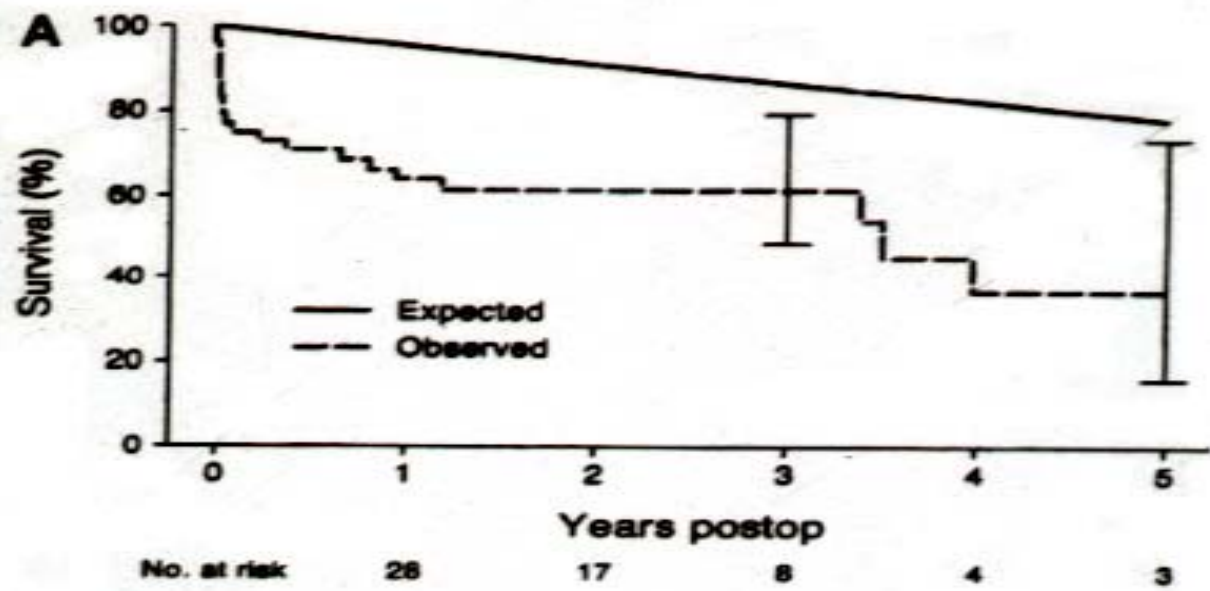
LOW GRADIENT

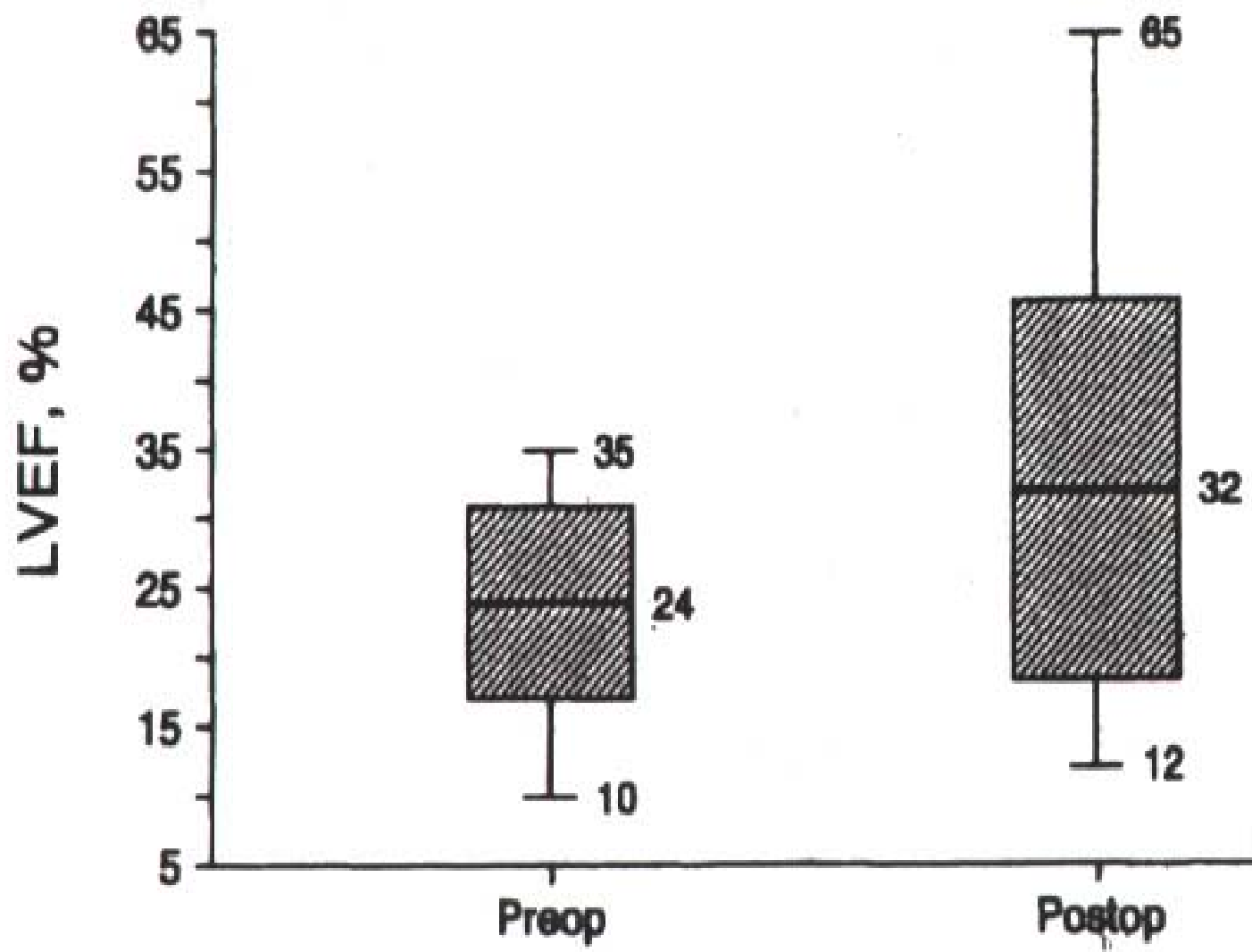
LOW OUTPUT

LOW EJECTION FRACTION





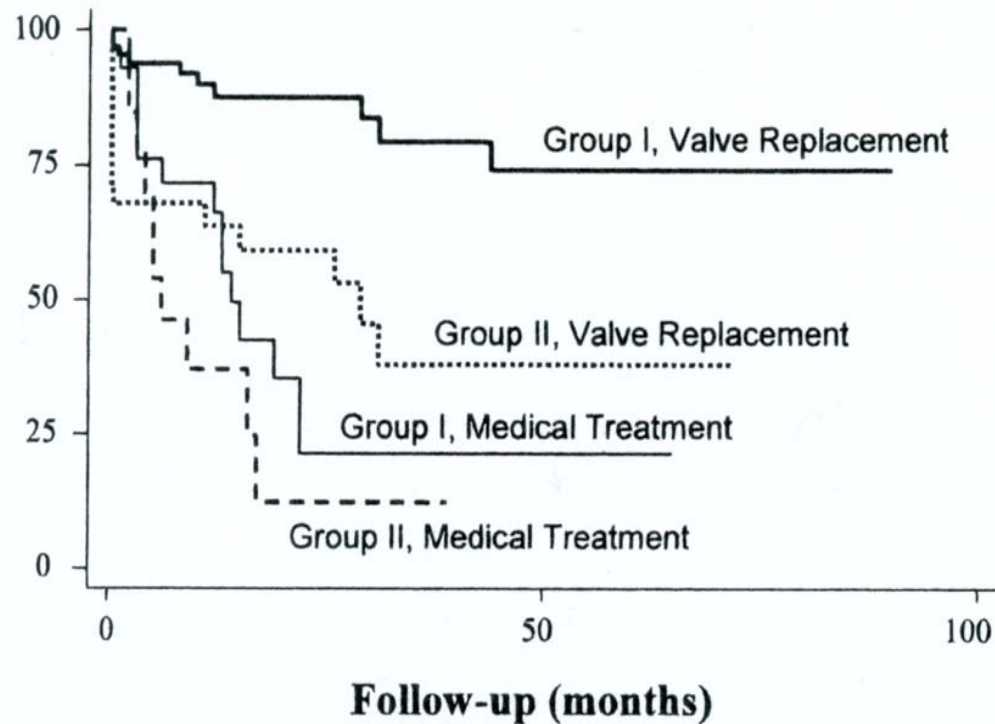




# HOW DO YOU KNOW WHO WILL IMPROVE

- INOTROPIC RESERVE

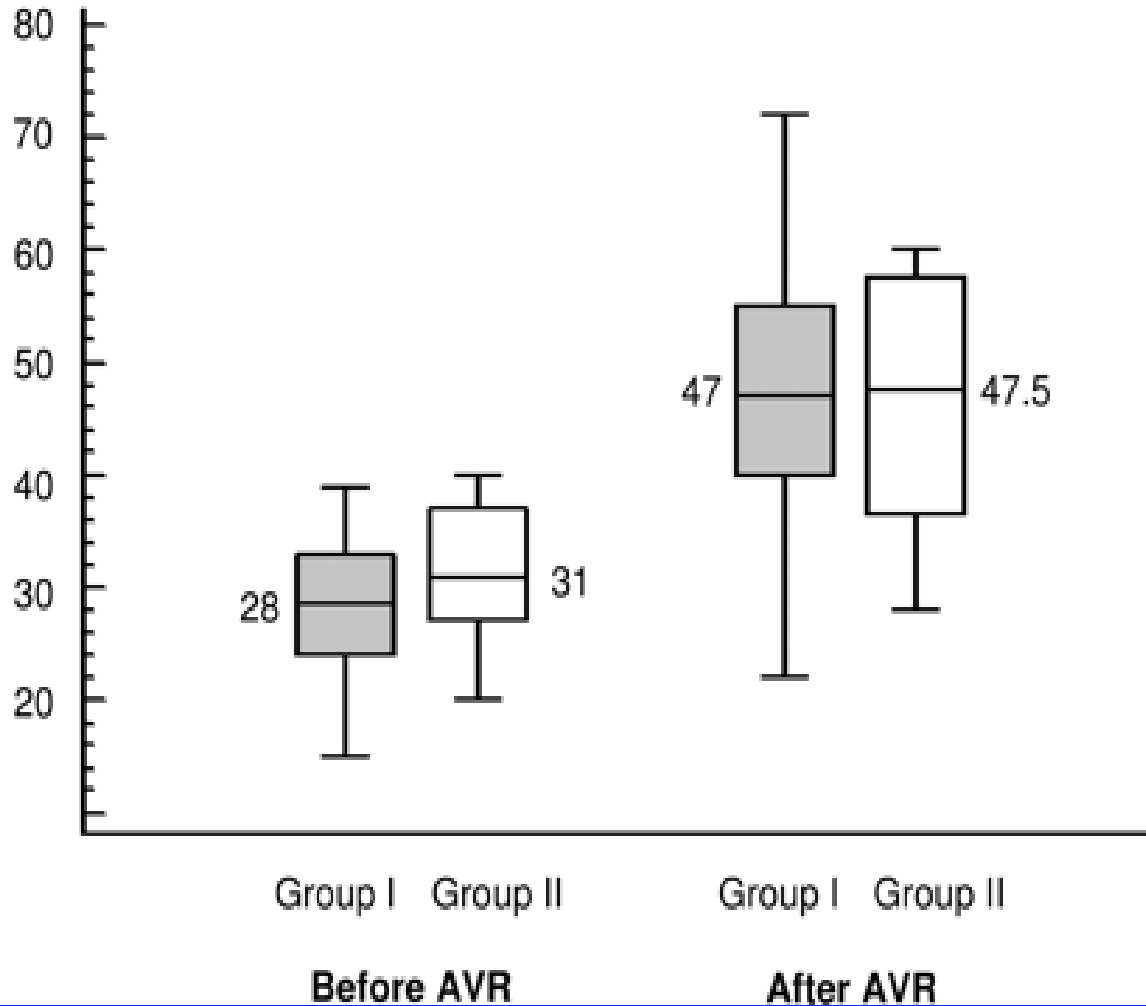
## Patient Survival (%)



Kaplan-Meier survival estimates by group and treatment.

Monin J-L, Quere J-P, Monchi M, et al. Low-gradient aortic stenosis: operative risk stratification and predictors for long-term outcome: a multicenter study using dobutamine stress hemodynamics. *Circulation* 2003;108:319-324.

# LVEF (%)



QUERE et al

# TRUE vs PSEUDO AS

AT LOW FLOW BOTH HAVE SMALL  
AVA

TRUE AS GRADIENT AND CO  
INCREASE TOGETHER

PSEUDO CO INCREASES, GRADIENT  
DOES NOT AND AVA INCREASES

# BERGLER-KLEIN

	BNP<550	BNP>550
• TRUE MED	4/4	3/5
• TRUE AVR	8/8	6/12
• PSEUD MED	17/19	7/12
• PSEUD AVR	4/5	2/4

# DECISION FOR AVR

EF	GRAD	DOB		AVR
0.25	47	0		DAH
0.25	25	(CO)+ (G)+		YES
0.25	15	-	-	?
0.25	20	+	-	??