

Cardiac syndrome X - Management -

Gaetano A. Lanza

*Istituto di Cardiologia
Università Cattolica del Sacro Cuore
Roma, Italy
g.a.lanza@rm.unicatt.it*

Cardiac syndrome X

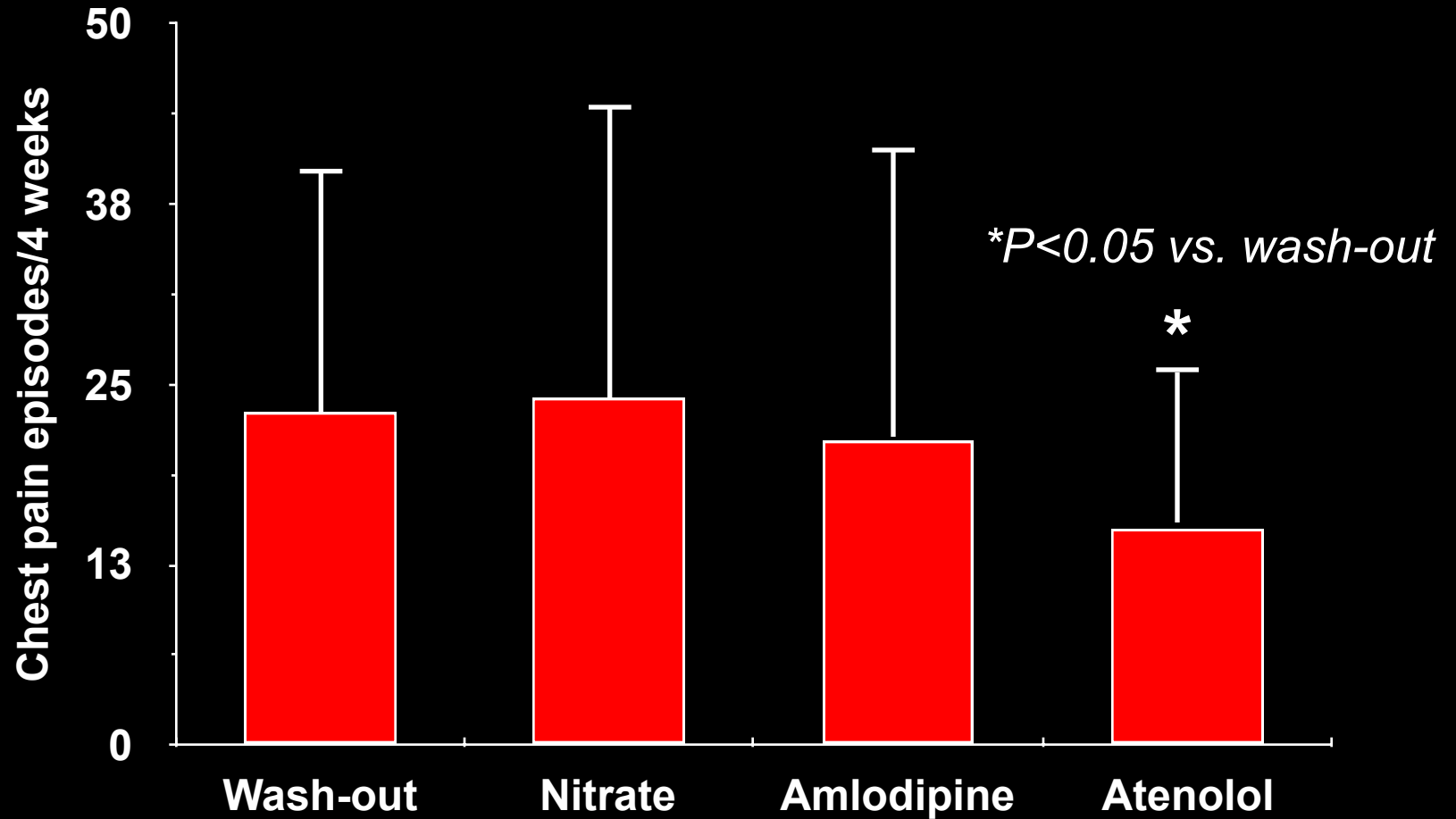
- Anginal pain on effort typical enough to suggest CAD
- Evidence for a cardiac ischemic origin of symptoms (mainly, exercise-induced ST segment depression)
- Normal coronary arteries (or minor irregularities or discrete stenosis <20%)
- No epicardial spasm
- No specific cardiac/systemic disease (normal LV function)

Main results of trials with beta-blockers In patients with cardiac syndrome X

	Drug	Symptoms	ExT	Holter	CBF
Bugiardini 1989	Propranolol			+	
Romeo 1990	Acebutolol		+/-		
Borghi 1991	Propranolol	+	+		
Wiedermann 1995	Propranolol				+/-
Fragasso 1997	Atenolol	+	+		
Lanza 1997	Atenolol	+			

(+) = positive effect; (-) = no effect

Effects of some antiischemic drugs
on chest pain in 10 patients with syndrome X
(Lanza GA, Am J Cardiol 1999;84:854-6)



Main results of trials with calcium-antagonists In patients with syndrome X

	Drug	Symptoms	ExT	Holter	CBF
Cannon 1985	Verapamil	+	+		
	Nifedipine				
Bugiardini 1989	Verapamil			-	
Cannon 1990	Lidoflazine	-	+		+
Romeo 1990	Verapamil		+		
Montorsi 1990	Nifedipine		+		+
Borghi 1991	Verapamil	-	+		
Sutsch 1995	Diltiazem				-
Lanza 1997	Amlodipine	-			
Özçelik 1999	Nisoldipine	+	+		

(+) = positive effect; (-) = no effect

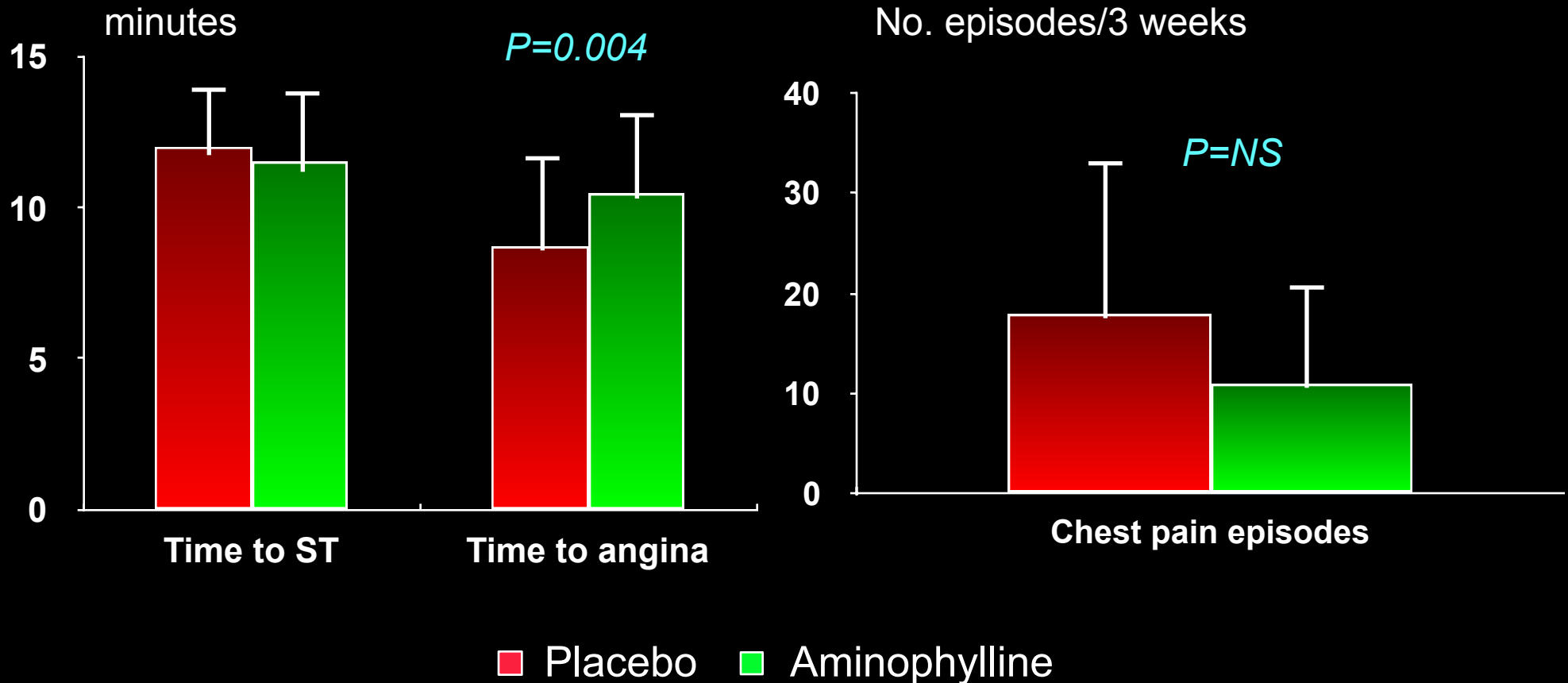
Efficacy of short-acting nitrates on chest pain In patients with angina and normal coronary arteries

	No. Patients	Efficay (%)
Waxler 1971	86	47
Kemp 1973	200	41
Day 1976	45	18
Pasternak 1980	159	41
Isner 1981	109	64
Bass 1983	46	19
Romeo 1993*	30	33
Kaski 1995*	99	42
<i>*Typical CSX patients</i> Lanza 2007*	153	52

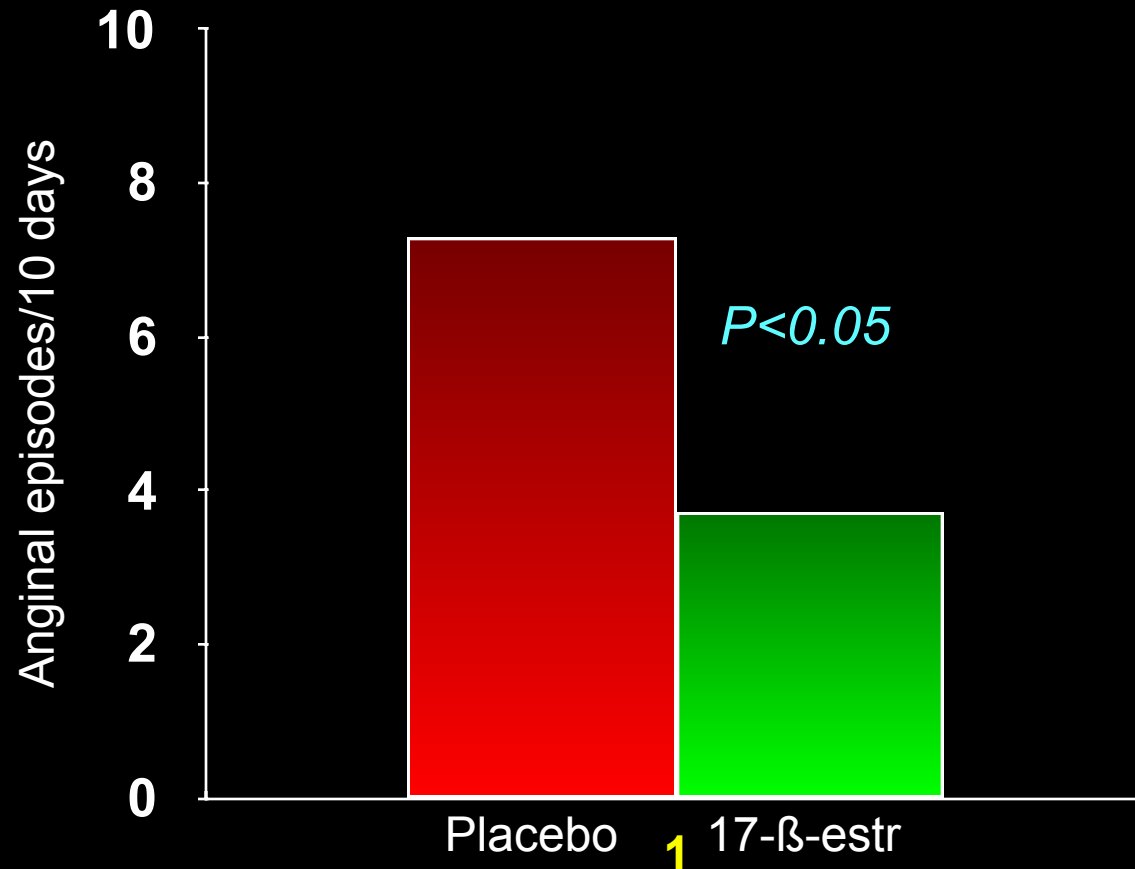
Main alternative medical treatments for CSX

Xanthine derivatives	Adenosine antagonists; inhibitor of NE uptake
ACE-inhibitors	Anti-angiotensin II; improved endothelial function
Statins	Improved endothelial function; anti-inflammatory effect
Alpha-antagonists	Anti-alpha vasoconstrictor effect
Estrogens	Improved endothelial function; vasodilator effects
Nicorandil	ATP/K-channel opener; nitrate like effects
Trimetazidine	Improved cardiac metabolism during ischemia
Imipramine	Anti-visceral pain transmitter; antidepressive effects

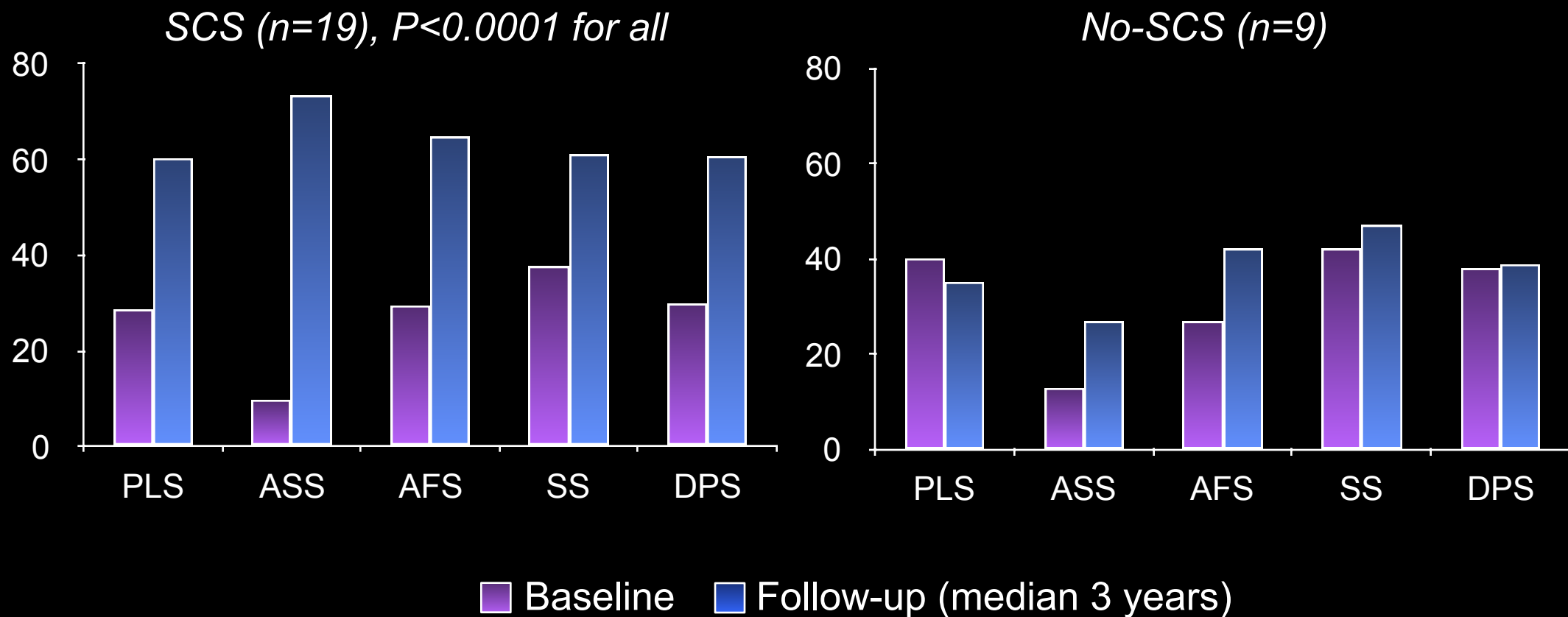
Effect of aminophylline on exercise test and chest pain episodes in syndrome X
(Elliott PM, Heart 1997;77:523-26)



Effect of 17- β -estradiol on chest pain episodes in postmenopausal women with syndrome X
(Rosano G, JACC 1996;28:1500-5)



Seattle Angina Questionnaire items in patients with refractory CSX treated or not treated by spinal cord stimulation
(Sgueglia GA, Heart 2007;93:591-597)



Management of patients with cardiac syndrome X

Anti-ischemic drugs

β -blockers
Ca₂₊-antagonists
Nitrates

Symptom
persistence

Alternative drugs

Xanthines
ACE-inhibitors
Statins
Estrogens*
Others**

Symptom
persistence

Rehabilitation programs
Spinal cord stimulation
Other**

Effective

Continue

Effective

Continue

**in post-menopausal women*

***See text*