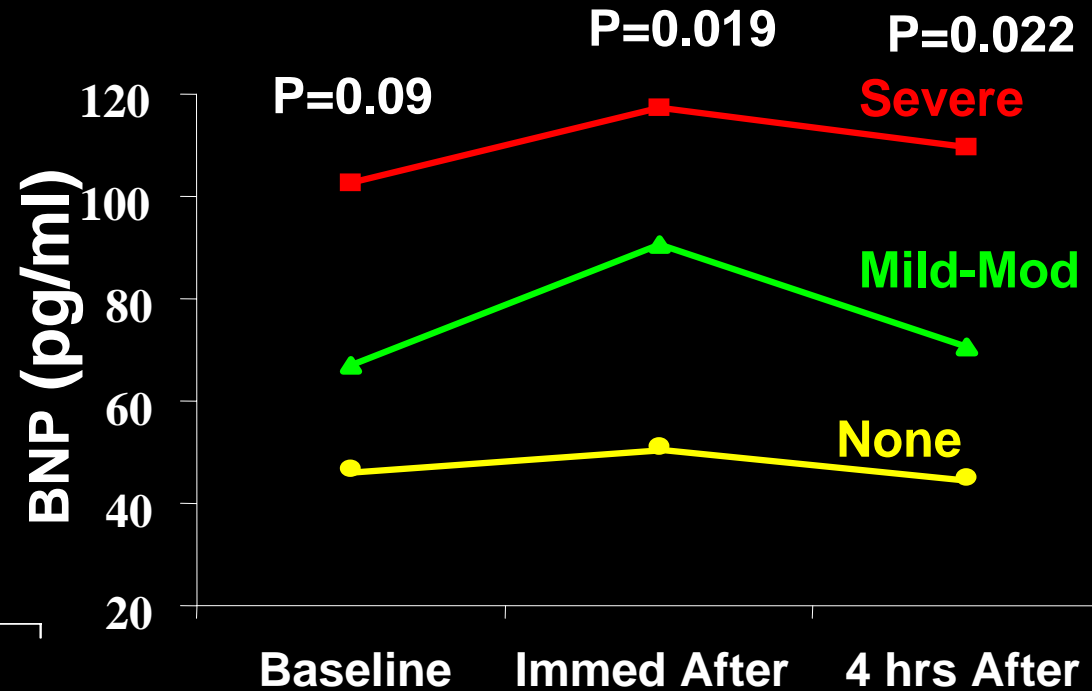
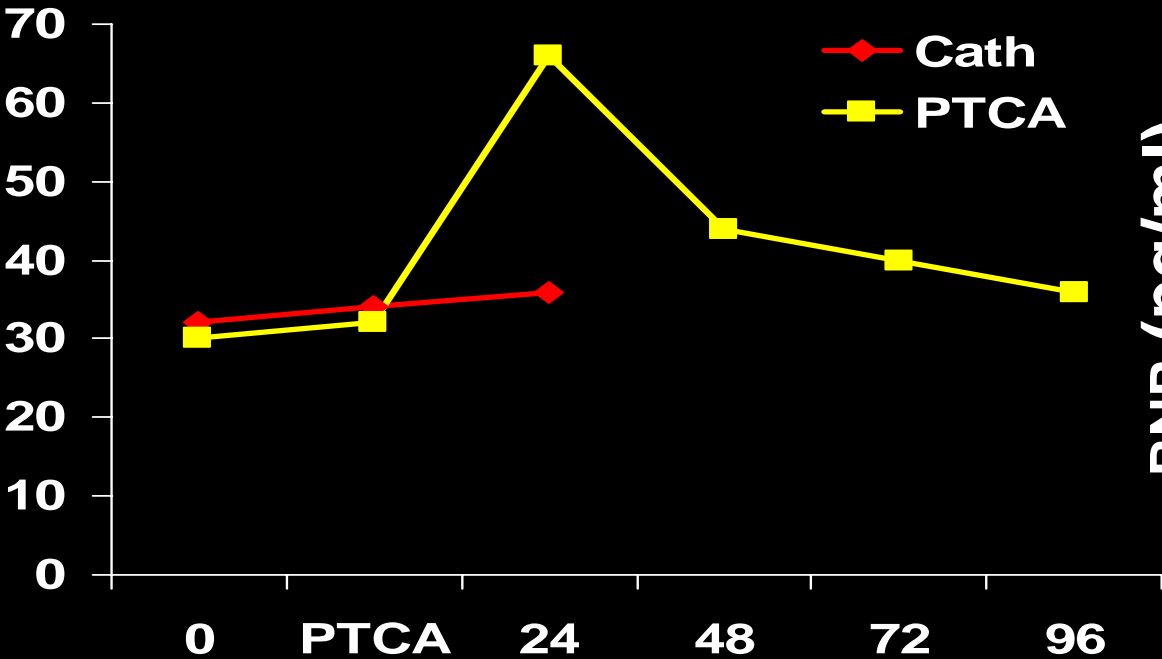

Natriuretic Peptides in Coronary Artery Disease

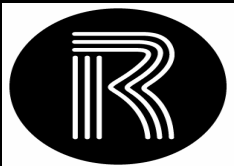
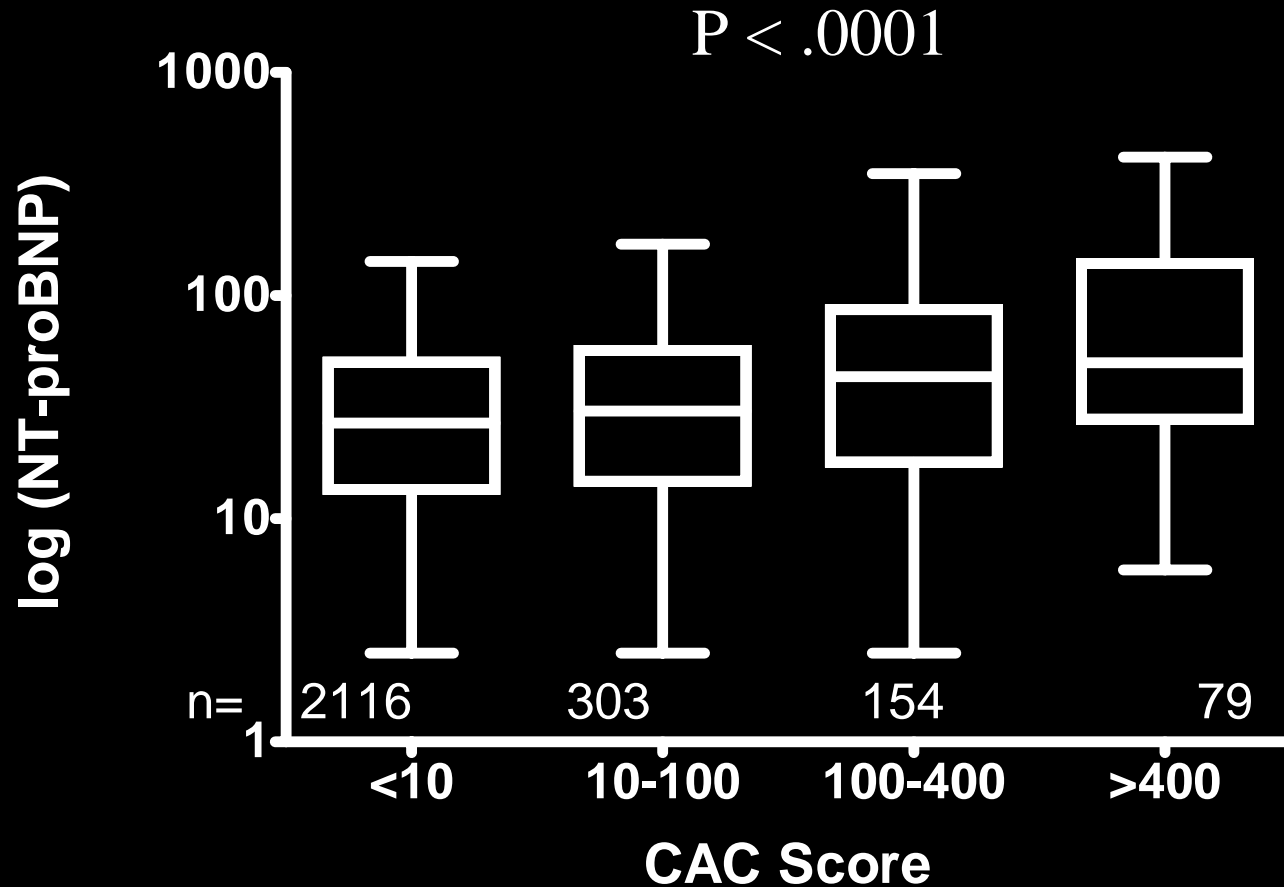
James de Lemos, MD



Ischemia as a Stimulus for BNP release

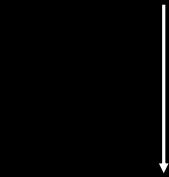


NT-proBNP and CAC



Mechanisms of BNP Release in CAD

Coronary Atherosclerosis



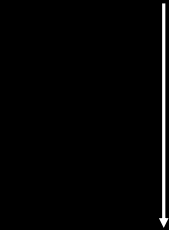
Ischemia



Cellular and Tissue Hypoxia



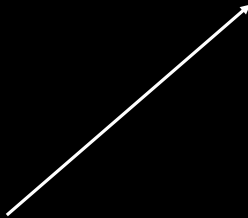
BNP synthesis and secretion



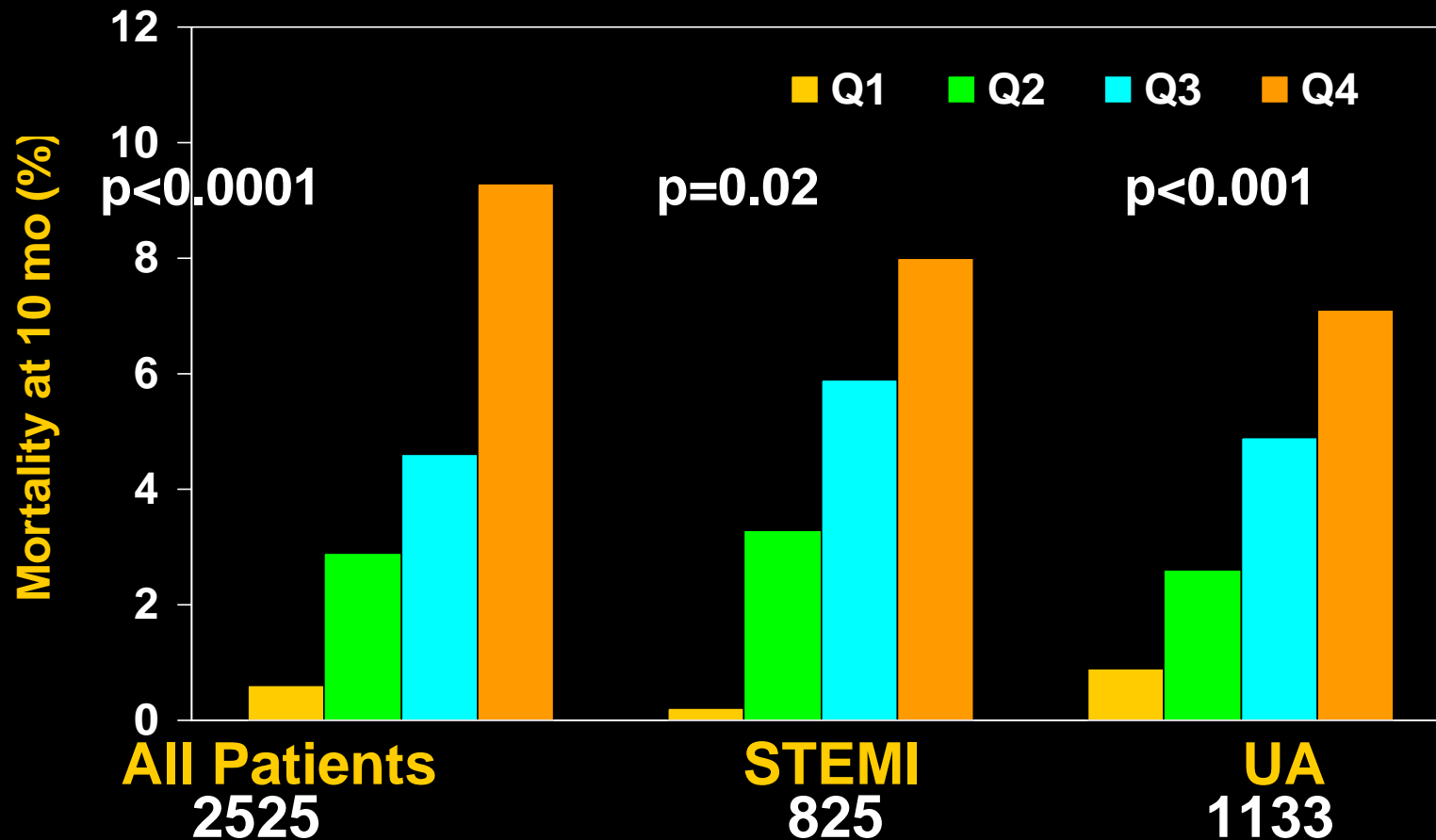
Regional Wall Stress



Cardiomyocyte Stretch



BNP & Risk of Death OPUS-TIMI 16 Trial



N

Adjusted Risk of 10-month Mortality

Age > 75

Killip Class II-IV

ST Deviation \geq 1 mm

New LBBB

Diabetes

cTnl > 1.5 ng/mL

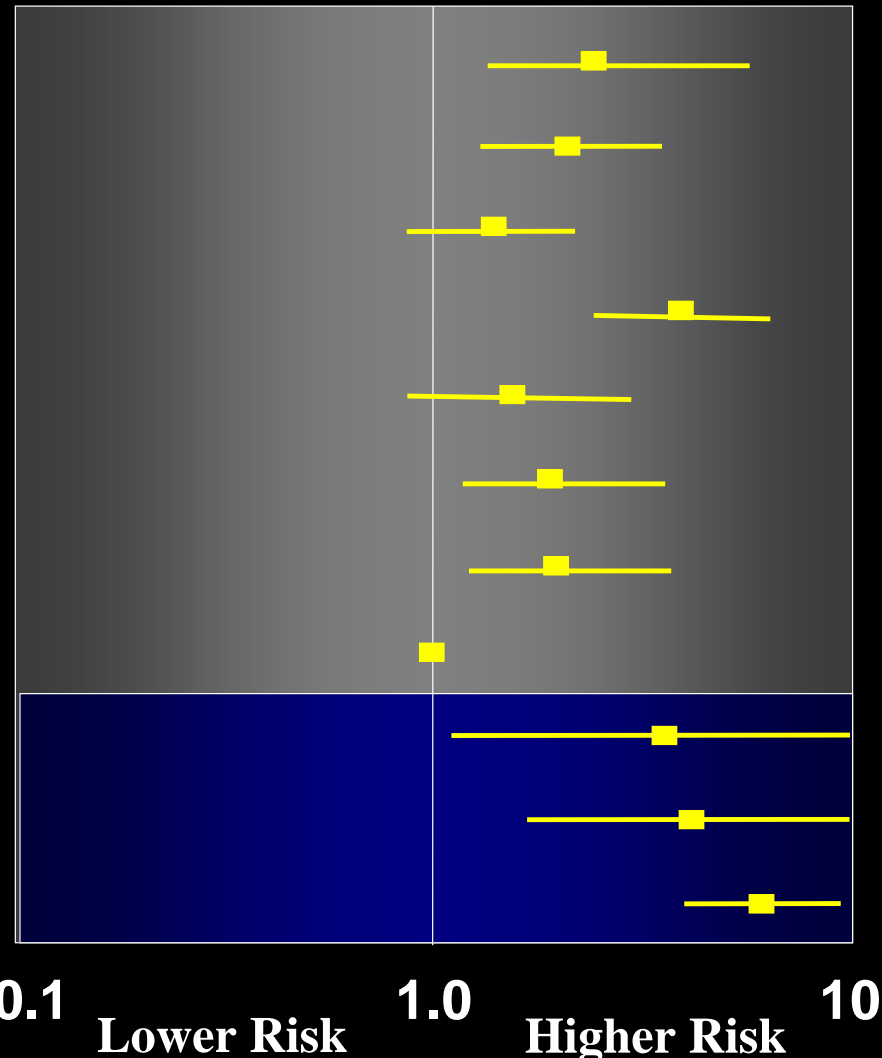
CRP > 1.5 ng/mL

BNP, quartile 1 (reference)

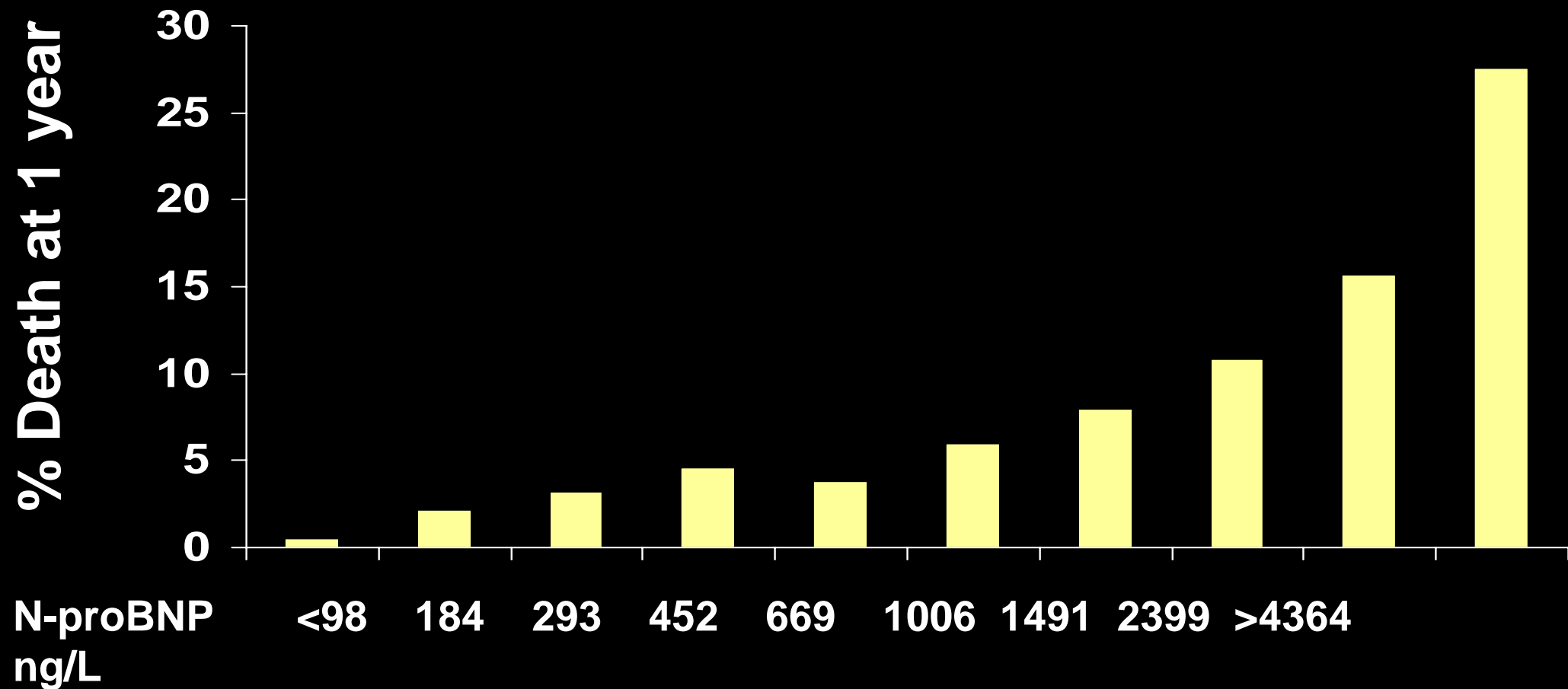
BNP, Quartile 2

BNP, Quartile 3

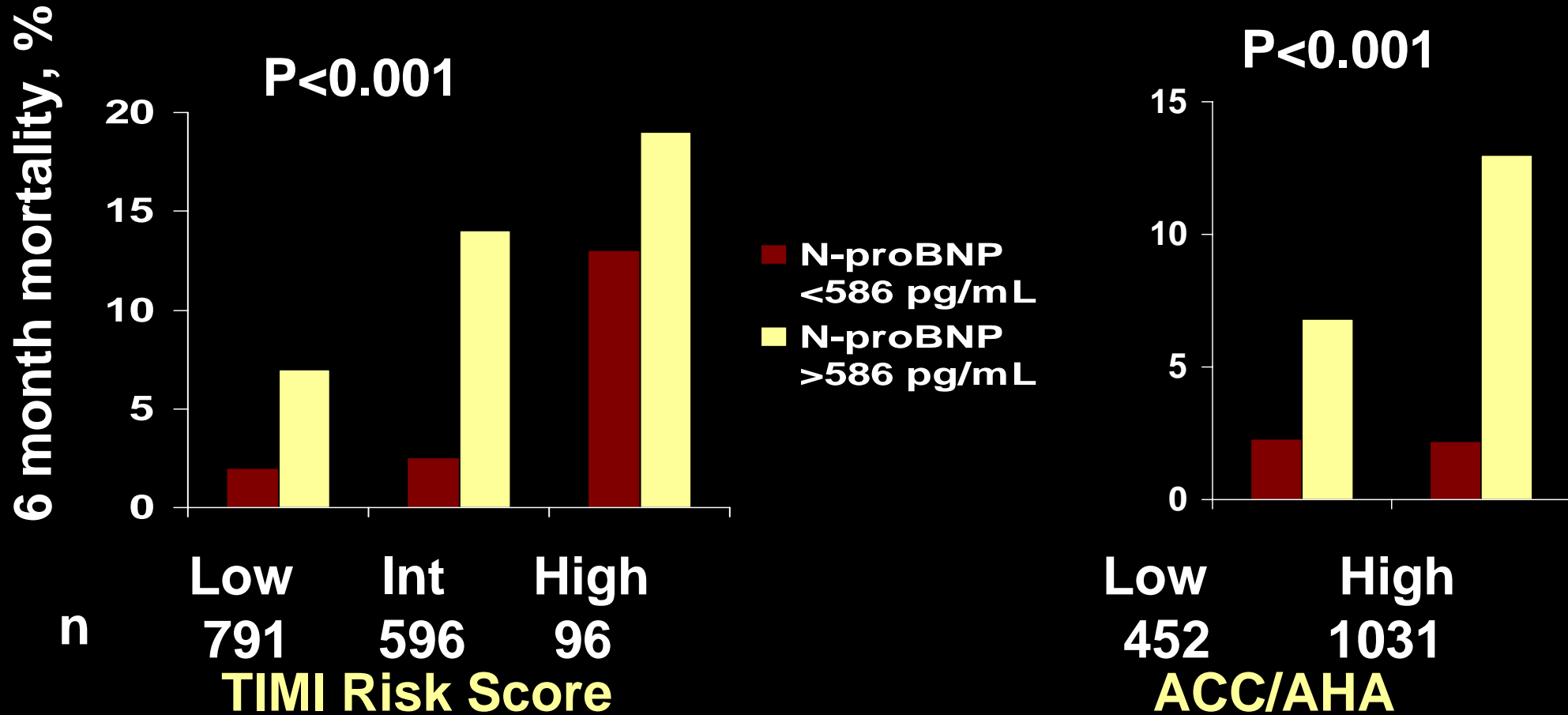
BNP, Quartile 4



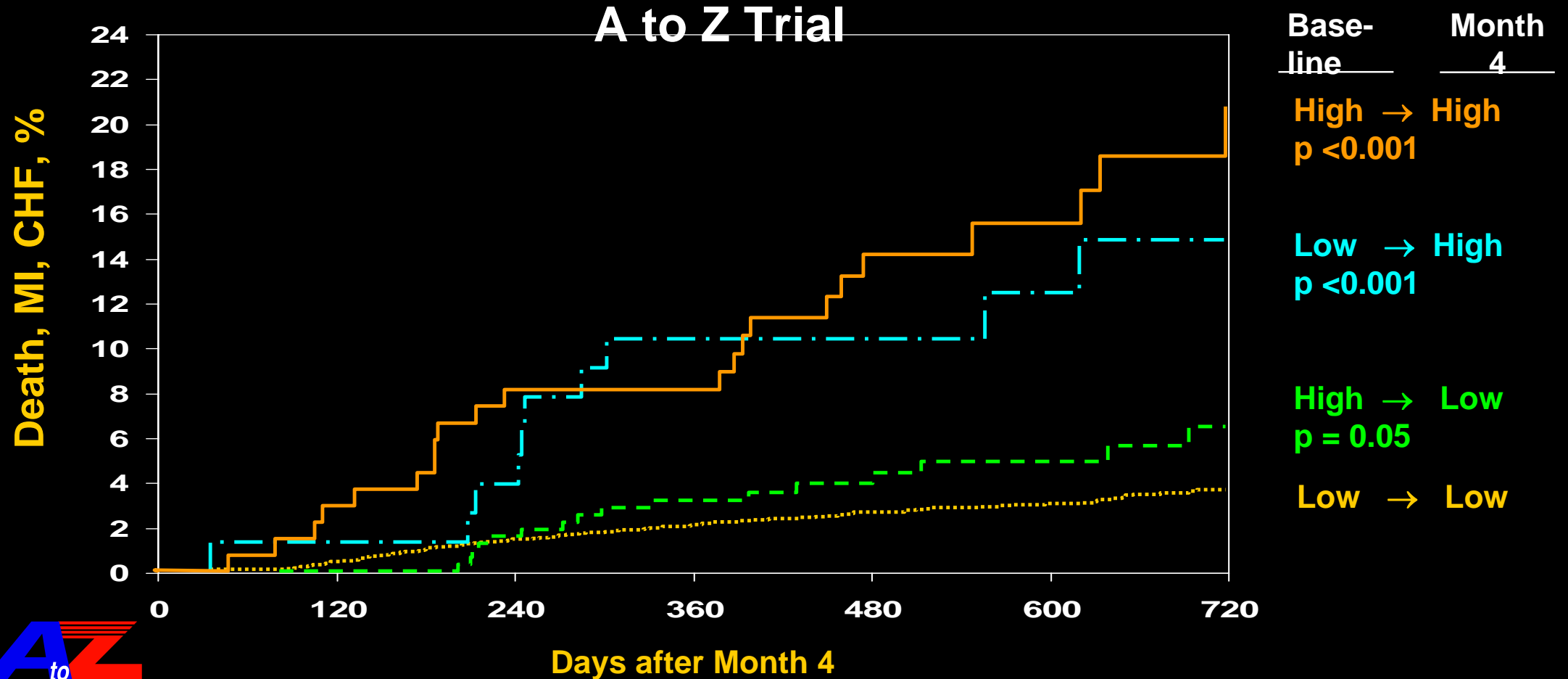
N-proBNP in ACS



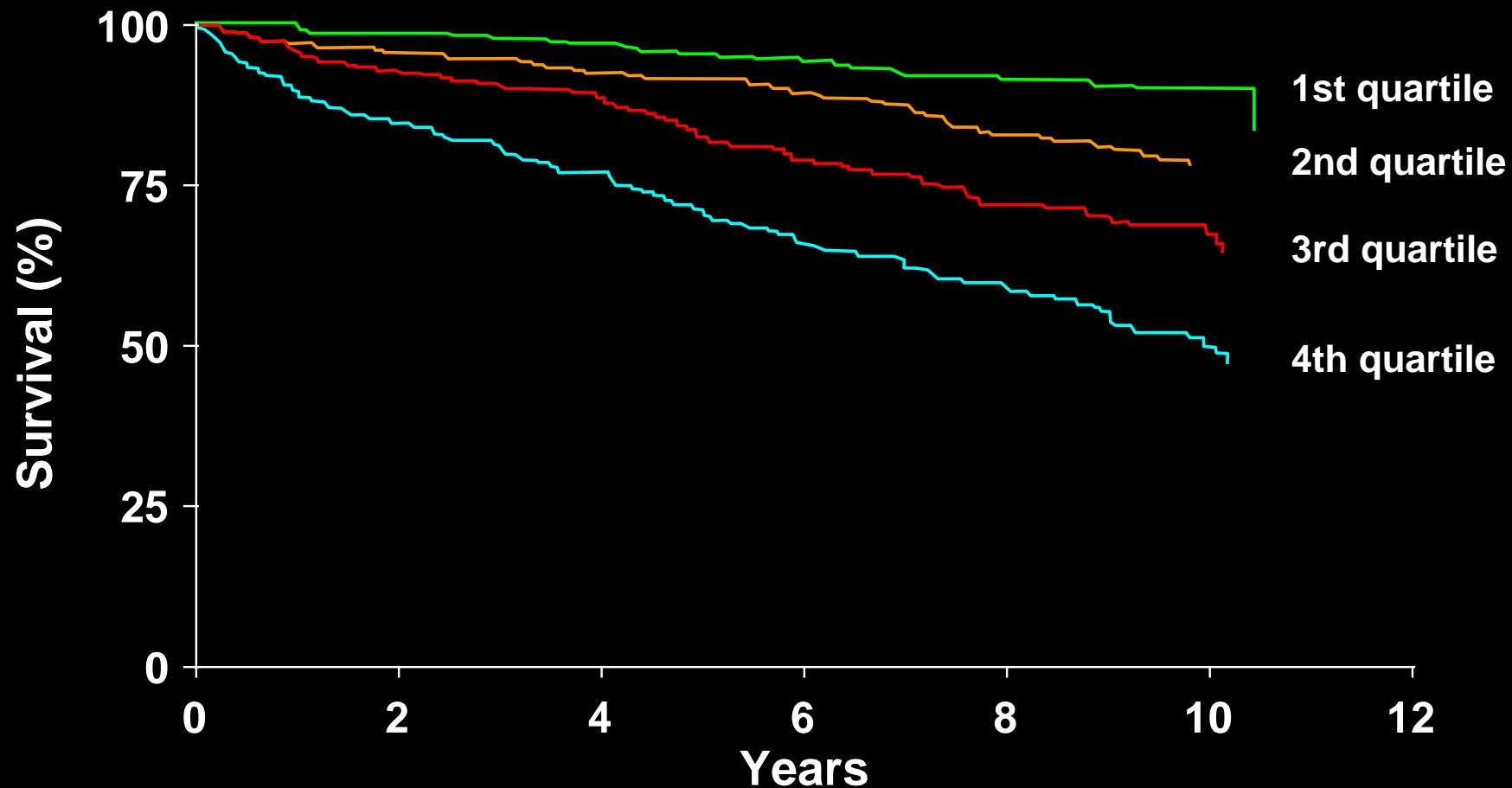
N-proBNP and TIMI Risk Score



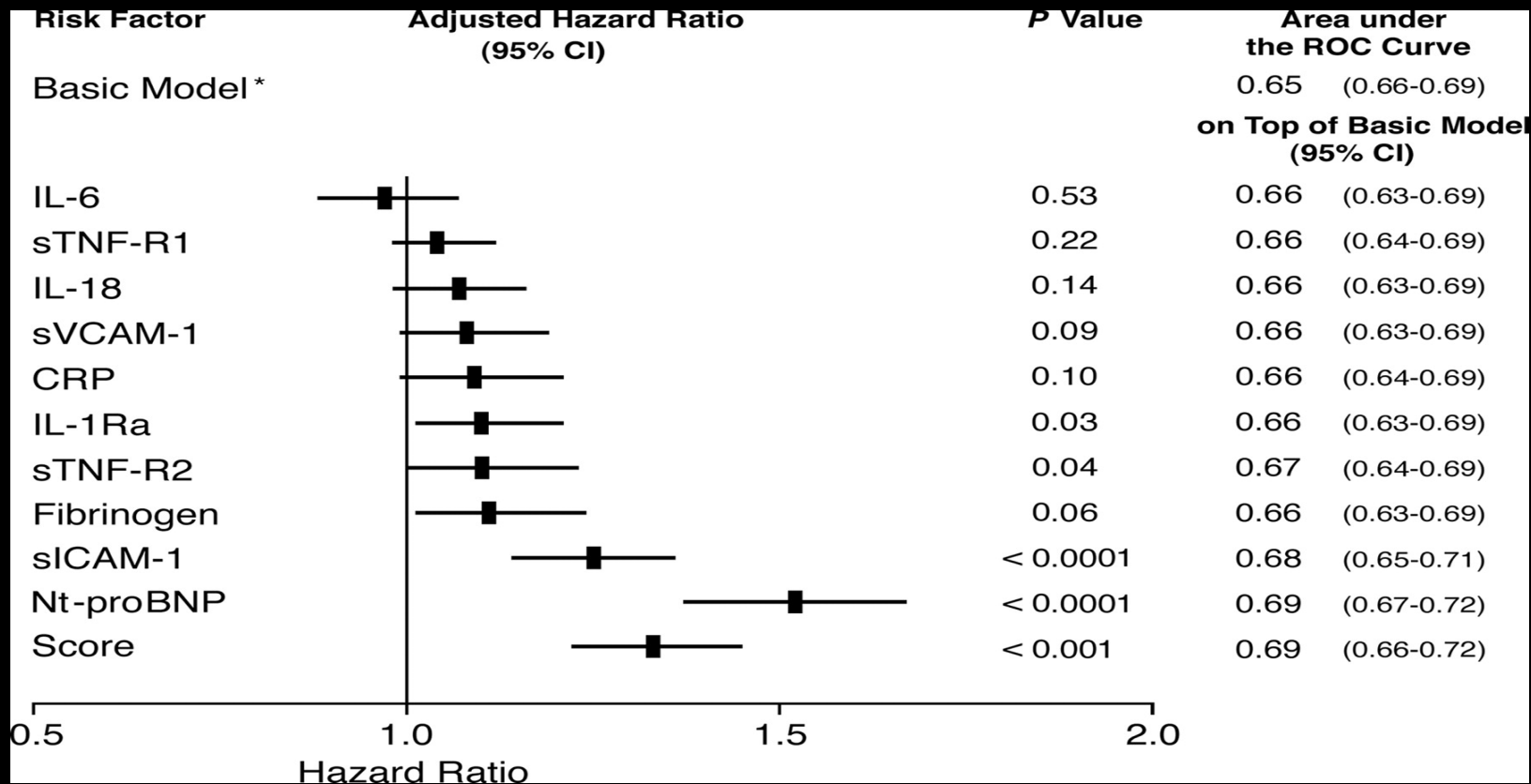
Clinical Relevance of Achieved BNP in Patients with ACS



NT-proBNP in Stable CAD



HOPE Study: NT-proBNP vs Other Biomarkers



PEACE Study

<u>Outcome</u>	<u>BNP</u> HR (95% CI)*	<u>NT-proBNP</u> HR (95% CI)*
CV Mortality	1.1 (0.9-1.3)	1.7 (1.4-2.1)
MI	0.9 (0.8-1.1)	1.0 (0.9-1.2)
CHF	1.6 (1.3-2.0)	2.4 (1.9-3.0)
Stroke	1.2 (0.9-1.5)	1.6 (1.3-2.1)

*Per SD increment in BNP or NT-proBNP

Conclusions

- Cardiac ischemia is a stimulus for natriuretic peptide release
 - Magnitude of elevation similar to many other conditions
 - Not useful as ischemia diagnostic marker
- NT-proBNP and BNP robust predictors of death and heart failure in patients with ACS and chronic CAD
 - Therapeutic implications not yet known
 - ?NT-proBNP more robust vs BNP in stable CAD