



QUALITY OF CARE AND OUTCOMES ASSESSMENT

WHAT THRESHOLD SHOULD BE USED TO DEFINE PERCUTANEOUS CORONARY INTERVENTION-RELATED MYOCARDIAL INFARCTION? AN APPROACH BASED ON CLINICAL RELEVANCE FROM EARLY ACS AND SYNERGY

ACC Poster Contributions

Ernest N. Morial Convention Center, Hall F

Monday, April 04, 2011, 9:30 a.m.-10:45 a.m.

Session Title: Clinical and Financial Implications of Complications

Abstract Category: 46. Outcomes Assessment

Session-Poster Board Number: 1101-144

Authors: *Sergio Leonardi, Laine Thomas, Megan L. Koehler, Pierluigi Tricoci, Renato D. Lopes, Harvey D. White, Paul W. Armstrong, L. Kristin Newby, Kenneth W. Mahaffey, Duke Clinical Research Institute, Durham, NC*

Background: Many trials define percutaneous coronary intervention-related myocardial infarction (PCI-MI) as CKMB $\geq 3x$ ULN. The appropriateness of this threshold is unclear and widely debated.

Methods: Patients (pts) enrolled in SYNERGY and EARLY ACS who underwent PCI and had ≥ 1 biomarker measure within 24 hrs after PCI were analyzed. A time-dependent Cox proportional hazards model was used to estimate the hazard of 1-year death with spontaneous MI (sMI, biomarker level $\geq 2xULN$) adjusting for GRACE covariates. The adjusted hazard for 1-year death with a PCI-MI was calculated using increasing peak/ULN ratios of CKMB to identify that peak/ULN ratios level with a similar hazard to sMI. Pts with post PCI CKMB levels $< 3x$ ULN were excluded.

Results: Of 19,519 pts in the 2 trials, 9,358 (47.9%) were included. By day 30, sMI occurred in 275 pts (2.9%; 3.6 [1.7, 6.5] days from baseline) and PCI-MI in 880 (9.4%; 1.0 [0.7, 2.0] days from baseline). sMI was independently associated with 1-year death (HR 5.7 [95% CI 4.2-7.8]; $P < 0.0001$). To achieve a HR for death of 5.7, a post-PCI elevation of $\approx 26.5xULN$ for CKMB (bounds on threshold: 10.75-60) was required (\approx HR 5.7; 95% CI 2.8-11.4). Only 5 PCI-MI pts (0.6%) had a CKMB $> 26.5x$ ULN (Fig).

Conclusions: sMI (biomarker $\geq 2xULN$) is strongly associated with mortality. A similar risk for PCI-MI requires a higher threshold of CKMB but the confidence intervals are wide. Further evaluation is needed but these findings may provide important insights about PCI-MI definitions.

