

## Impact of early (<24h) versus delayed (>24h) intervention in patients with non ST segment elevation myocardial infarction (an observational study of 20882 patients)

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**Background:** In patients presenting with non ST-segment elevation acute coronary syndromes (NSTEMI-ACS) an invasive approach has been shown to be superior to conservative management.

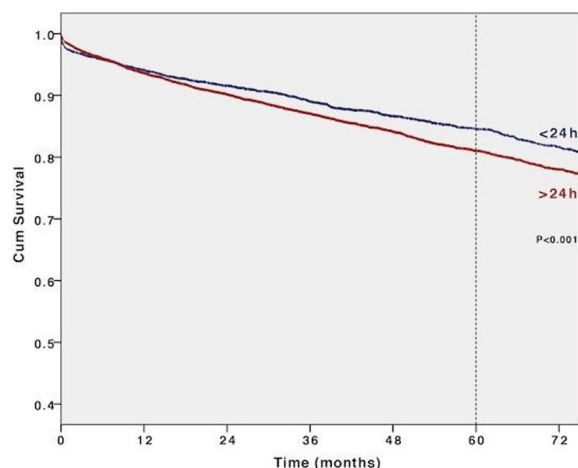
**Purpose:** We aimed to investigate the optimal timing of invasive coronary angiography and subsequent intervention.

**Methods:** We examined the impact of early ( $\leq 24$ h) versus delayed ( $> 24$ h) intervention in a large observational cohort of 20882 consecutive patients with acute NSTEMI myocardial infarction (NSTEMI) treated with PCI between 2005 and 2015 at 9 tertiary cardiac centers in London (UK) using Cox-regression analysis and propensity matching.

**Results:** Mean age was  $64.5 \pm 12.7$  years and 26.1% were females. A quarter (27.6%), were treated within 24h. Patients treated within 24h were slightly younger ( $62.8 \pm 12.8$  vs.  $65.2 \pm 12.6$ ,  $p < 0.001$ ), most commonly male

(76% vs. 72.9%,  $p < 0.001$ ) and were more frequently ventilated (2.3% vs. 1.4%,  $p < 0.001$ ) and in cardiogenic shock (3.6% vs. 1.4%,  $p < 0.001$ ) with dynamic changes on their ECG (84.5% vs. 76.1%  $p < 0.001$ ). At a median follow up of 4.2 years (interquartile range 1.8 to 7) 17.7% of patients had died. Estimated 5-year survival in patients treated within 24h was 84.6% vs. 81% for those treated  $> 24$ h following their presentation ( $p < 0.001$ ). This survival benefit remained following adjustment for confounders; HR (delayed vs. early management) 1.11 (95% CI 1.003 to 1.23,  $p = 0.046$ ). In the propensity matched cohort of 4356 patients in each group, there remained a trend for higher survival in the early intervention group ( $p = 0.061$ ).

**Conclusions:** Notwithstanding the limitations of the retrospective design, this real-world cohort of NSTEMI patients suggests that an early intervention ( $\leq 24$ h) may improve mid term survival.



At risk	Time 0	1 year	5 years
$\leq 24$ h	5857	3819	1751
$> 24$ h	15121	7888	3456

Figure 1