

In-hospital Outcomes of Percutaneous Coronary Intervention (PCI) in Nonagenarians: An Updated Systematic Review and meta-analysis.

Background:

Nonagenarians (90 year and older) represent the fast-growing subset of elderly population globally. With the increasing life expectancy in this population, prevalence of coronary artery disease (CAD), and the need for PCI continue to increase.

Methods:

We conducted a systematic search on Pubmed, Medline, Google scholar, Web of Science for the articles that reported outcomes of PCI in nonagenarians from January 2000 until December 2019. The following search terms were used: “percutaneous coronary intervention” “nonagenarians”, “90 years”. Pooled proportions were calculated using random-effect model and the results were presented as pooled proportion (%) with 95% CI. Outcomes of interest were in-hospital mortality, cardiogenic shock on presentation, in-hospital bleeding and stroke.

Results:

Our search resulted in 33 studies with 18, 835 patients included in this meta-analysis. While majority of the nonagenarians (70.5%) had acute coronary syndrome (ACS), 29.5% had stable angina. 28 studies reported in-hospital mortality and pooled proportion of in-hospital mortality was 12% (95% CI 0.09-0.16, with I² of 93%). 10 studies reported cardiogenic shock on presentation and pooled proportion of cardiogenic shock on presentation was 4% (95% CI 0.02-0.09, with high heterogeneity with I² of 95%). Pooled proportion of in-hospital stroke and in-hospital bleeding were 1% (95% CI of 0.01-0.02, in 11 studies with I²=38%), and 2% (95% CI of 0.01-0.04, in 18 studies with I²=94%) respectively.

Conclusions:

The contemporary data on PCI in nonagenarians showed acceptable in-hospital mortality and peri-procedural complications. These findings suggest that advanced age alone cannot be considered as a barrier for invasive intervention, and PCI can be offered to nonagenarians after careful risk stratification.

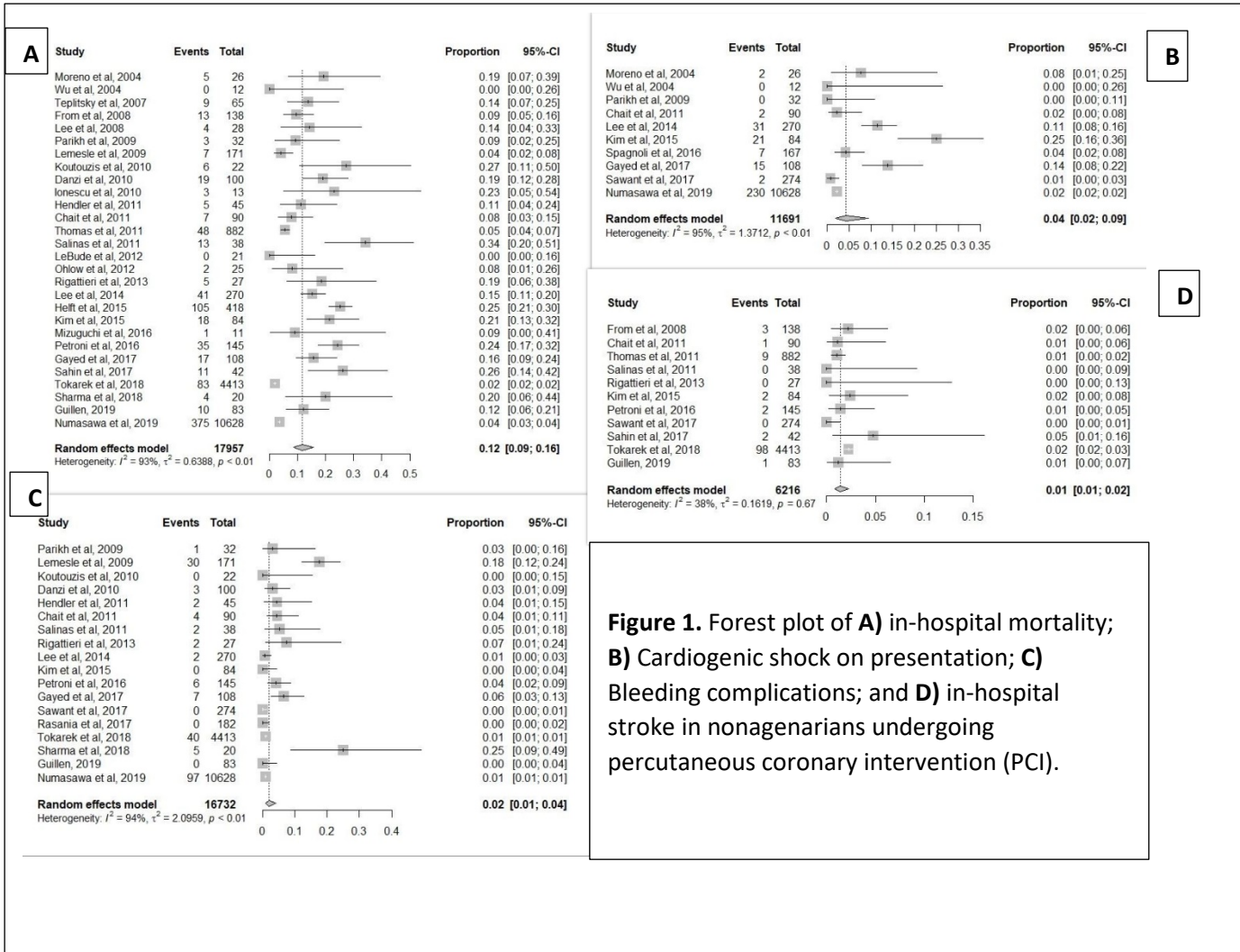


Figure 1. Forest plot of **A)** in-hospital mortality; **B)** Cardiogenic shock on presentation; **C)** Bleeding complications; and **D)** in-hospital stroke in nonagenarians undergoing percutaneous coronary intervention (PCI).

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