STEMIs with Young age may fare similar to Elder age – An unexpected result.

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Background and Purpose:

Previous studies have shown that patients with Elder age (age >45) have adverse **short and long term** outcomes when compared to young age (≤45 years)[1]. However, previous studies did not exclude patients with poor prognostic conditions that are more common in patients >45 years of age and hence may translate into poor prognosis. Hence, the main purpose of this study was to compare mortality outcomes between young (≤45 years) STEMI patients and Elder (>45 years) STEMI patients.[1-2]

Methodology:

It was a retrospective cohort study done from 2013-2018 on 361 STEMI patients aged between 18-65 years who underwent immediate Coronary Catheterization and Percutaneous Intervention. Patients with **poor prognostic conditions** like previous MI, known LV Dysfunction, Prior revascularization, dialysis dependant and stroke patients were excluded. Patients were followed for Mortality outcomes for a total of 30 days post STEMI. Details of risk factors and Coronary lesion anatomy were noted on a Proforma.

Results:

Of the 361 patients selected, we identified 151 patients up to 45 years of age (mean age: 39.4 vs.59.9 years). Patients in the young group were predominantly men (90.0% vs. 72.0%, p<0.05), obese (51.0 % vs. 36.0%, p=0.01) and predominantly had Single vessel disease (67% vs. 45%, p<0.05) but had a lower prevalence of hypertension (31.0 % vs. 57.0%, p<0.05). Double and triple vessel disease was more commonly seen after age 45, (23% vs. 36%, p=0.01) and (8% vs. 18%, p=0.009) respectively. (figure 1)There was non-significant difference in regards to Diabetes (37% vs. 46.3%), Positive family history of Premature Coronary Artery Disease (47.2% vs. 53.6%) and Smoking status (45% vs. 36.4%). (figure 2). The relative risk for All-Cause-Mortality at 30 days post STEMI was found to be 1.4 (0.5-3.6) which was non-significant which did not change even after adjustment for potential confounders like obesity, diabetes, Positive family history of CAD, Smoking, etc. (figure 3)

Conclusion:

Young patients with STEMI may have similar short term (≤30 days) mortality outcomes post STEMI compared to elder patients if patients with **poor prognostic conditions** e.g. history of Prior MI, Prior revascularisation, LV Dysfunction, End-stage renal disease or stroke are excluded.

References:

1. **Atypical risk factor profile and excellent long-term outcomes of young patients treated with primary percutaneous coronary intervention for ST-elevation myocardial infarction. European Heart Journal: Acute Cardiovascular Care. 2016 Feb;5(1):23-32.**
2. Short and long-term survival after primary percutaneous coronary intervention in young patients with ST-elevation myocardial infarction. International journal of cardiology. 2016 Jan 15;203:697-701.

Fig. 1: Percentages for disease distribution

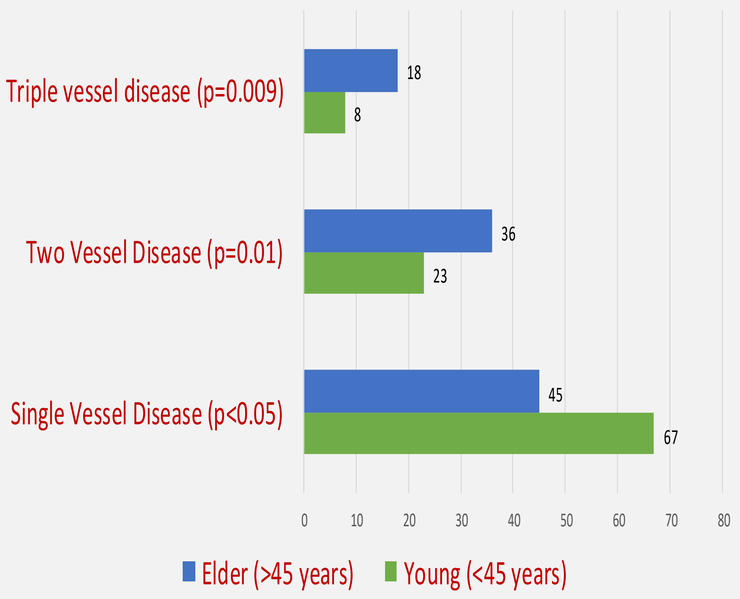


Fig 2: Comparison of Baseline characteristics

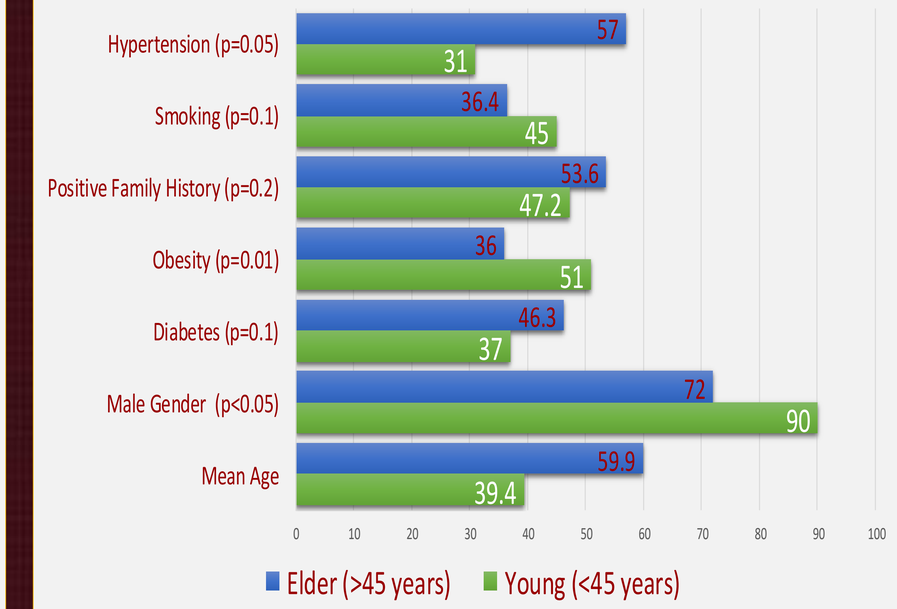
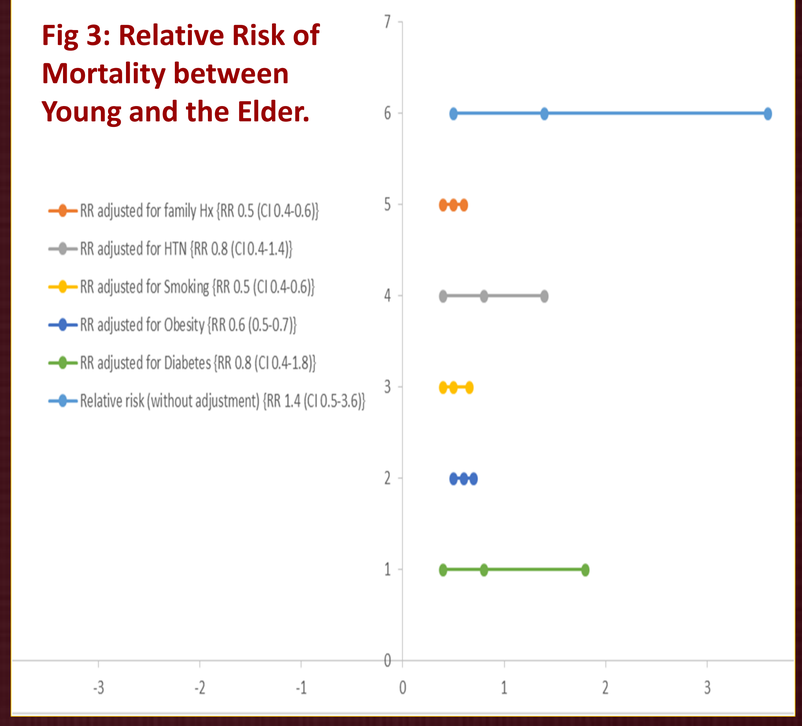


Fig 3: Relative Risk of Mortality between Young and the Elder.



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