Abstract: P6443
Late outcomes in patients undergoing PCI for ST elevation myocardial infarction with respect to diabetic status and completeness of revascularisation

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Topic(s):
ST-Elevation Myocardial Infarction (STEMI)

Citation:
European Heart Journal (2019) 40 (Supplement), 4043

Objectives: This paper examines the degree to which the poor prognosis of ST elevation myocardial infarction (STEMI) patients with diabetes mellitus (DM) can be attributed to incomplete revascularization (ICR).

Background: Cardiovascular disease is the most common cause of death for patients with DM; patients with DM often have complex coronary disease and ICR. In STEMI the relative impact of DM and ICR is uncertain as these two factors frequently co-exist, the potential for confounding is high.

Methods and results: Of 589 consecutive STEMI patients, 22% had DM, who compared to patients without DM were of similar age (59 years), were more often female, had more hypertension and dyslipidaemia, but less often were smokers. A residual SYNTAX Score (rSS) >8, which defined ICR, occurred in 33%. Late cardiac death [median 3.5 years] was 4% among those without DM and 12% in those with DM (p=0.002) (p<0.001), and was 3% among 396 with rSS≤8 and 12% in 193 patients with rSS>8 (p<0.001). Patients with both ICR and DM accounted for only 8% of the STEMI population but 30% of all cardiac deaths. At final follow up (3.5 years) cardiac death rates (see Figure) were 22% in patients with both DM and ICR; these were significantly higher than rates in patients with ICR but no-DM (9%, p=0.034), and those with DM and rSS≤8 (6%, p=0.019). Multivariable analysis for cardiac death found a HR for ICR of 2.89 (95% CI 1.31–6.37; p=0.009) and a HR for DM of 5.18 (95% CI 2.45–10.97, p<0.001).

Conclusions: While ICR in DM patients with STEMI predicts a significantly poorer outcome, the poor prognosis seen in patients with DM is not explained by the degree of ICR alone. Both ICR and DM contribute independently to the risk of cardiac death in STEMI patients.

Diabetes, cardiac death & rSS