

P3124

### Predictive value of the residual SYNTAX score following primary PCI in multivessel patients with MI-related cardiogenic shock - a CULPRIT SHOCK sub-analysis

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**Background:** Complete revascularization (CR) – assessed by the residual SYNTAX score (rSS) – following PCI is associated with a better prognosis – in stable coronary disease, acute coronary syndrome and myocardial infarction (MI). Whether, the completeness of revascularization impacts the prognosis of patients in cardiogenic shock (CS) remains unclear.

**Aim:** Assess the prognosis value of rSS following primary PCI in multivessel patients undergoing MI-related CS.

**Methods:** The CULPRIT SHOCK trial – the largest randomized trial (n=706) to date in CS – compared an immediate multivessel PCI (MVPCI) strategy to a culprit lesion only PCI (with possible staged revascularization) strategy in multivessel patients with MI-related CS. The rSS were retrospectively assessed following last PCI (either index or staged) by a central core laboratory and patients were allocated in 4 different groups according to rSS: CR (rSS=0), 0 < rSS ≤5, 5 < rSS ≤14, rSS >14. The prognostic impact of rSS on the 30-day composite endpoint (mortality and/or severe renal failure) and 30-day and 1-year mortality were assessed using multivariate logistic regression.

**Results:** Among the 604 patients with last rSS available, aged 68.2±11.4, the median rSS was 9.0 [4.0–17.0]. CR was achieved in 75 (25%) patients

in the MVPCI strategy and in 31 (10.2%) in the culprit lesion only PCI strategy. One hundred and six (17.5%), 102 (16.9%), 198 (32.8%) and 198 (32.8%) patients had a rSS=0, 0 < rSS ≤5, 5 < rSS ≤14 and rSS >14, respectively. Patients with a higher rSS were older, less active smoker, had more triple vessel disease, chronic total occlusion, post-PCI culprit coronary TIMI flow <3 and require more mechanical circulatory support and catecholamine. Univariate analysis shows a stepwise increase in adverse events according to rSS: patients with 5 < rSS ≤14 and rSS >14 had higher rates of 30-day primary endpoint (OR [95% CI]: 2.02 [1.24; 3.29] and 2.75 [1.69; 4.49]), 30-day mortality (OR [95% CI]: 2.13 [1.29; 3.51] and 3.14 [1.90; 5.18]) and 1-year mortality (OR [95% CI]: 2.39 [1.46; 3.90] and 3.47 [2.11; 5.71]) compared to patients with CR. After multiple adjustment, rSS – tested as continuous variable – was independently associated with 30-day primary endpoint, 30-day and one-year mortality (Figure)

**Conclusion:** Among multivessel patients with MI-related cardiogenic shock, 1) complete revascularization is achieved only in one fourth of the patients using a MVPCI strategy and, 2) the residual SYNTAX score is independently associated with early and late mortality.

