MESH COVERED STENTS AND MYOCARDIAL BLUSH IN STEMI PATIENTS

ACC Moderated Poster Contributions
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Authors: Nike Preis, Hanusch Krankenhaus, Vienna, Austria

Background: Our single centre retrospective trial sets out to examine the outcome of PCI in STEMI patients using a mesh covered stent device designed to provide embolic protection compared to a control group in with conventional stent devices. Endpoints were myocardial blush measured by a quantitative method, TIMI after PCI, ST-segment elevation resolution, and 6 months mortality.

Methods: Our trial included 58 single vessel interventions after acute STEMI. In 24 patients the mesh covered stent was deployed, the control group included 34 patients. Myocardial reperfusion after PCI was assessed by Myocardial Blush Grade (MBG) and by using the Quantitative Blush Evaluator (QuBE) a computer program created by Vogelzang et. al. (2009) providing a quantitative measure for myocardial blush. To apply the QuBE to our angiographic data we modified the method calculating the increase in grey value in the filling phase of the vessel, only. The modified QuBE value is significantly correlated with MBG (p<0.001) and ST-elevation resolution (p=0.02). Complete ST-segment resolution was defined as a resolution of more than 70% 60 to 90 minutes after PCI.

Results: We found a non-significant trend of better TIMI flow grade and MBG after PCI in patients treated with mesh covered stents (TIMI 2: 8.3%, 3: 91.7%; MBG 2: 8.3%, 3: 91.7%) compared to the control group (TIMI 1: 2.9%; 2: 17.7%, 3: 79.4%; MBG 1: 8.8%; 2: 17.7%; 3: 73.5%). Quantitative measured myocardial blush was significantly better (median: 5, q1/q3: 4/7 vs. median: 3.5, q1/q3: 2/6; p<0.001). No significant difference was found with respect to ST-segment elevation resolution and 6 months.

Conclusions: At the current stage our trial suggests, the deployment of mesh covered stents results in better myocardial reperfusion in STEMI-patients compared to conventional stent devices. It may be assumed that covering a stent with a mesh may protect against distal embolization in thrombus burden. Further randomized research is needed.