Results: OCT assessment was available in 119 patients. Nine had a MACE (peri-procedural myocardial infarction, myocardial infarction during follow-up or cardiac death), while 110 had no complications (control group). The control group showed a smaller number of cross section with residual thrombus area >10% respect to MACE group (8.26±9.49 vs 16.00±12.25; P = 0.02) and a smaller mean Thrombus area % (4.71±2.64 vs 0.33±0.94, P = 0.008).

Conclusions: Residual intrastent thrombus is associated with higher incidence of cardiac events during follow-up in STEMI patients treated with primary angioplasty despite the adoption of aggressive strategy for thrombus removal.

TCT-134
Residual Infrastent Thrombus After Primary Angioplasty Identifies Patients With With worsened Microcirculatory Indexes. Insight From The COCTAIL II
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Background: Recent Frequency Domain Optical Coherence Tomography (FD-OCT) studies showed that, even with the use of aggressive technical solutions, a complete removal of thrombotic materials is rarely achieved after percutaneous coronary interventions (PCI) for ST-segment elevation myocardial infarction (STEMI). Residual intra-stent thrombus can result in distal embolization leading to microcirculatory injury. The aim of this study was to assess the possible correlation between residual intrastent thrombus and angiographic indexes of myocardial reperfusion.

Methods: COCTAIL II enrolled 128 STEMI patients which underwent primary PCI within 6 h from onset of chest pain and randomized to one of the following four treatments: local infusion of abciximab delivered by the ClearWay with (group 1) or without thrombectomy (group 2), intracoronary abciximab with (group 3) or without thrombectomy (group 4). Intrastent thrombus at OCT assessment was defined as the maximum % value of Thrombus area (thrombus area/stent area x 100 in the cross section with largest thrombus). A value > 16% was considered indicative of high residual intrastent thrombus. By study design the following angiographic indexes of myocardial reperfusion were evaluated: TIMI value, corrected TIMI Frame Count (cTFC) and Myocircus Flow (MCF).

Results: Finally the OCT data were available in 119 patients: 64 had a maximum % value of Thrombus area ≤ 16%, whilst the remaining 55 had a residual intrastent thrombus >16%. No differences were found between the two groups regarding the microcirculatory indexes evaluated. After intervention patients with intrastent thrombus ≤16% showed a significant improvement in the final TIMI value (2.87±0.33 vs 2.67±0.54; P = 0.014) and final cTFC (11.71±4.58 vs 17.44±17.44; P = 0.012). No statistically significant differences were found for MCF (2.58±1.05 vs 2.3±0.87; P = 0.25).

Conclusions: Data obtained from the COCATAIL II study suggest that the presence of high residual intrastent thrombus in patients undergoing primary angioplasty is associated with worsened final microcirculatory indexes.

TCT-135
A Systematic Review and Meta-analysis of Randomized trials of Manual Thrombectomy in ST-Elevation Myocardial Infarction
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Background: The utility of manual thrombectomy in patients with ST-elevation myocardial infarction (STEMI) has been questioned after the recent publication of the TASTE study (N=7244). This study was larger than all combined previous trials published to date and it found no benefit with manual thrombectomy for the primary outcome of all cause mortality. With these new findings, we sought to perform an updated meta-analysis of randomized clinical trials with a focus on clinical outcomes.

Methods: Medline, Embase and Cochrane database as well as conference proceeding from major cardiology meetings were searched for randomized trials comparing manual aspiration thrombectomy in addition to percutaneous coronary intervention (PCI) versus PCI alone in patients presenting with STEMI.

Results: A total of 19 randomized controlled trials enrolled 11,197 patients presenting with STEMI to either manual thrombectomy or PCI or conventional PCI. There was no a significant trend toward reduction in all cause death with manual thrombectomy vs. PCI alone (2.9% vs 3.5% with an odds ratio (OR) of 0.82 (95% CI: 0.66 to 1.01; p =0.06). Manual thrombectomy was associated with a reduction in major adverse coronary events. The re-ESTED (OR: 0.91; find a ppost to 0.88; p=0.008), stent thrombosis (OR: 0.54; 95% CI: 0.32 to 0.93; p=0.02), target lesion revascularization (OR: 0.67; 95% CI: 0.5 to 0.91; p = 0.01) and rehospitalisation for heart failure (OR: 0.25; 95% CI: 0.09 to 0.71; p = 0.009). Manual thrombectomy was not associated with an increase in the risk of stroke (OR: 1.08; 95% CI: 0.62 to 1.87; p = 0.83).

Conclusions: Manual thrombectomy reduced the incidence of myocardial re-infarction, stent thrombosis, target lesion revascularization and rehospitalisation for heart failure. Further large scale trials are needed to determine the effect of thrombectomy on mortality.

TCT-136
Impact of Thrombectomy on Stent Thrombosis and In-Stent Restenosis after Primary PCI
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Background: The purpose of this observational study was to evaluate the impact of thrombectomy on in-stent restenosis and stent thrombosis in patients undergoing primary PCI due to ST-elevation myocardial infarction (STEMI).

Methods: Data were obtained from the SCAAR registry (Swedish Coronary Angiography and Angioplasty Registry) for PCI procedures performed in the county of Västra Götaland in Sweden between January 2005 and May 2013. The primary combined endpoint was in-stent restenosis and stent thrombosis. The study population consisted of 9058 stents that were used in 6595 procedures on 5388 patients. The two groups were compared using propensity score adjusted multilevel Cox proportional-hazards regression to account for hierarchical database. Stents were the primary observation unit, while patients and hospitals were two additional hierarchical clusters. Adjustments for differences in baseline characteristics were made with propensity score. The following variables were included in the calculation of the propensity score: age, gender, indication for PCI, smoking habits, hypertension, diabetes, metabolic syndrome, severity of coronary artery disease, previous infarction, previous PCI, coronary artery by-pass surgery (CABG), antiplatelet therapy, glycoprotein Ilb/IIa receptor antagonists (GP Ilb/IIa), bivalirudin, clopidogrel, ticagrelor, prasugrel, unfractionated heparin/low-molecular weight heparins (UFH/LMWH), year, hospital, completeness of revascularization, stent length, stent diameter.

Results: The two groups were balanced regarding age, gender, diabetes, smoking habits, hypertension, hyperlipidaemia, previous PCI, previous CABG. Patients who were treated with thrombectomy were more likely to be completely revascularized, pre-treated with aspirin and clopidogrel, and to receive bivalirudin and drug-eluting stents during the procedure. Mean follow-up time was 3.3 years. After adjustment, the use of thrombectomy was not associated with lower risk for stent thrombosis and restenosis (HR 1.14; 95% CI 0.81-1.63; P = 0.45).

Conclusions: In patients with STEMI, primary PCI with thrombectomy was not associated with decreased risk for in-stent restenosis and stent thrombosis.

TCT-137
Effective thrombectomy reduces no-reflow and in-hospital mortality frequency in patients with anterior ST elevation myocardial infarction undergoing primary percutaneous coronary intervention
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Background: The clinical outcome of intracoronary thrombus aspiration before primary percutaneous coronary intervention (PCI) in patients with ST-segment elevation myocardial infarction (STEMI) is controversial. Effective thrombectomy treatment on myocardial damage has not been evaluated comprehensively. The main goal of this study is to examine clinical impact of effective thrombectomy (ET) and non-effective thrombectomy (non-ET). We prospectively included 395 patients with TIMI 0 or 1 flow anterior STEMI, who underwent p-PCI with thrombus aspiration within 12 hours from symptom onset. Manual thrombus aspiration devices (6f VMAX Asp. Catheter, ASTRON, Germany,crossing profile,0.068 in) were used for thrombectomy. Effective thrombectomy (ET) was defined as achieved visible aspiration material.Non-ET was defined as no visible aspiration material. No-reflow was defined as TIMI grade 0, 1 and 2 flows or TIMI grade 3 with myocardial blush grade 0 and 1. The primary end points were the occurrence of no-reflow and the rate of 90-min ST-segment resolution >70%. Patients were divided into two groups (ETandnonETgroups) according to their aspiration materials.

Results: Effective thrombectomy was observed 178 (60.3%) of patients. No-reflow was lower in ET group compared with non-ET group 28 (15.7%) and 47 (40.2%), p <= 0.001). Baseline clinical and demographic characteristics of the subjects were similar. Ejection fraction, creatinine, platelet aggregometry and hospital mortality. Killip class II-IV and Post-pPCI TIMI frame count were lower in ET group compared with non-ET group (p <0.05 for all). Infection time, total stent length (mm), initial SYNTAX score, post-primary PCI SYNTAX score and use of Ilb/IIa glycoprotein inhibitors were similar in two groups (p>0.05 for all).