Pre-hospital abciximab initiation in STEMI MISTRAL: a prospective controlled randomized double blinded trial

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Objectives: to investigate whether in-ambulance abciximab initiation, in ST-elevation myocardial infarction (STEMI) patients improves ST segment resolution (STR) after primary percutaneous intervention (PCI).

Methods: MISTRAL is a prospective randomized double blind study conducted in 11 centers in France (ClinicalTrial.gov number NCT 00638638). 256 patients with STEMI within 6 hours from symptom onset were allocated to receive Abciximab started either in the Mobile Intensive Care Unit (MICU) or later in the cathlab after diagnostic angiography. Other treatments in the MICU were started either in the MICU or conducted in 11 centers in France (ClinicalTrial.gov number NCT 00638638). 256 patients with STEMI within 6 hours from symptom onset were allocated to receive Abciximab started either in the Mobile Intensive Care Unit (MICU) or later in the cathlab after diagnostic angiography. Other treatments in the MICU included aspirin 250 mg IV, heparin 40 UI/kg IV. Primary endpoint was complete (>70%) ST-segment resolution was adjudicated by an independent centralized ECG-Correlab.

Results: mean age was 56 ± 12 years old and 80 % of the patients were males. Median delay from symptoms to diagnosis was 90 min and 103 min from diagnosis to balloon. Complete ST resolution was similar in the early and later groups 21% vs 15% (p=0.44) before PCI and 70% vs 67% (p=0.07) 60 min after PCI. Mean residual ST elevation tended to be lower in the early group before PCI 8.1 ± 9.6 mm (P=0.17) but not after PCI 3.0 ± 3.2 mm (P=0.62). In the early group, TIMI 2-3 flow rate before PCI tended to be higher (45 ± 34%, p=0.009) and distal embolisation rate was lower (8 vs 21%, p=0.008). TIMI 2-3 flow rate post-PCI, blush score rates, LVEF, bio-logic infarct size, 30 days MACE were similar in both groups with very low mortality rates (1.7 vs 0.8%).

Conclusions: early ambulance vs. routine cathlab administration of abciximab in STEMI did not improve ST resolution post-PCI, final TIMI flow rate, LVEF, infarct size and MACE. Early ambulance abciximab tended to improve TIMI 2-3 flow rates pre-PCI and to reduce slow flow and distal embolisation during procedure. Early abciximab tends to “facilitate” PCI procedure since more arteries are opened at the time of angiography (45 vs 34 % TIMI2-3) and less embolisation or slow flow occurs during procedure.

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Iron deficiency in non-anemic heart failure patients.
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Background: Functional improvement has recently been reported in anemic and non-anemic heart failure (HF) patients with biological iron deficiency who were treated by intravenous iron substitution. Our aim was to show whether the non-anemic patients with iron deficiency have poorer functional tests than non-deficient ones.

Method: We included 138 HF patients without anemia from our HF department at Toulouse University Hospital into 2 groups: 1/ low ferritin rate group (LFG) with a serum ferritin of 100 µg/L and lower (n=42), 2/ normal ferritin rate group (NFG) with serum ferritin over 100 µg/L (n=96). We measured standard blood tests and functional parameters including NYHA status, 6 minute walk test (6 WT), and peak oxygen consumption (VO2max).

Results: Baseline patient characteristics showed a slight difference for hemoglobin in non-anemic patients (LFG, 13.9; NFG, 14.4; p=0.04) who have no difference for ejection fraction (LFG, 27.5%; NFG 29.5%; p=NS) between groups. The iron deficient patients tend to be older (59 versus 63 yo, p=NS) and most of them were women (92% in LFG versus 67% in NFG (p=0.05)).

Functional parameters showed i) NYHA status of 2.29 in LFG versus 2.35 in NFG (p=NS); ii) 6’WT of 307m in LFG versus 361m in NFG (p=0.06); and, iii) VO2max of 13.8ml/min/kg in LFG versus 15.7ml/min/kg for the NFG (p=0.04). Moreover, the LFG had a higher creatinin rate of 145 µmol/l versus 107µmol/l for the NFG (p=0.02).

Conclusion: Iron deficient patients have poorer functional tests and are more likely to have renal insufficiency. Risk factors for iron deficiency in HF are the age and the female sex. We put in light some risk factors for iron defi- ciency that may help the practitioner making out which non-anemic HF patients should have blood tests to look for iron deficiency.