Acute Coronary Syndrome: STEMI, NSTEMI

**TCTAP A-006**

Impact of Polypharmacy on Adherence to Evidence-based Medications in Patients who Underwent Percutaneous Coronary Intervention


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**Background:** The study primarily aims to evaluate the impact of polypharmacy on adherence to evidence-based medications (EBM) among patients who underwent percutaneous coronary intervention (PCI) in Qatar.

**Methods:** We conducted a retrospective analysis of patient records from the year 2000 to the year 2010, focusing on patient adherence to high-dose statin therapy (PDT) at discharge. Adherence was assessed using a pharmacy database and patient records.

**Results:** Among 557 patients (85% male) who underwent PCI, adherence to EBM was low, with only 20% of patients adhering to all medications at discharge. Higher adherence was associated with lower hospital readmission rates (OR 0.5, 95% CI 0.3-0.8, p=0.005).

**Conclusion:** Polypharmacy at discharge negatively impacts patient adherence to evidence-based medications (EBM) following PCI. Further studies are needed to develop strategies to improve adherence to EBM in this population.

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**TCTAP A-007**

High Dose Atorvastatin Improved Endothelial Progenitor Cells Mobilization in Patients with Non-ST Elevated Acute Coronary Syndrome

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**Background:** High dose statin can significantly decrease the risk of recurrent major cardiac events in patients with acute coronary syndromes (ACS), but the mechanisms are still unclear. We hypothesized that the protective effect of high dose statin in ACS worked through profoundly increasing EPCs mobilization and subsequent myocardial neovascularization. We also studied the effects of high dose atorvastatin on EPCs mobilization in patients, then in order to investigate the possible mechanism underlying the EPCs mobilization effects of high dose statins in mouse myocardial infarction model.

**Methods:** From December 2010 to July 2011, patients with NSTEACS (n=48) during drug-eluting stent implantation were randomly given a standard dose atorvastatin (40mg/QN*28 days) or high dose atorvastatin (80mg/QN*28 days) at hospital admission. Early human EPCs de/dynamically counted by flow cytometry and plasma VEGF level as well as activation of PI-3K/Akt and endothelial nitric oxide synthase (eNOS) in mouse bone marrow were assessed by ELISA and analyzed using Chi-square and student T test.

**Results:** There was a significant difference in adherence to high dose atorvastatin in both two groups (p=0.001). Under high dose atorvastatin treatment, the level of early EPCs and the levels of VEGF kept still in standard group, but in high dose atorvastatin were observed before PCI (P<0.01). In addition to clinical trial, Wild-type C57BL/6 mice with acute anterior myocardial infarction model, and thereby high dose statins exert beneficial effects on myocardial neovascularization, left ventricular function and remodeling.

**Conclusion:** These results provide evidence that high dose atorvastatin could improve endothelial progenitor cells mobilization and could be of clinical benefit for patients with ACS.