Improved survival and reduced bleeding with low-molecular-weight heparin across all ACS subsets: findings from the Global Registry of Acute Coronary Events (GRACE)


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Background: The safety and efficacy of the antithrombotic agents UFH and LMWH have not been compared in the “real-world” setting in patients with ACS. The aim of this study is to identify patterns of use of UFH and LMWH and to report their correlates and outcomes in a broad spectrum of ACS patients enrolled in the observational GRACE study.

Methods and results: Data from 12,665 ACS patients were analyzed according to patient history, concomitant treatments and invasive procedures in sites located inside and outside of the United States. Patients who were more likely to receive UFH than LMWH were: aged <60 years; smokers; receiving antiplatelets, thrombolytics, beta-blockers, and ACE inhibitors; admitted to hospitals with PCI facilities; and undergoing invasive procedures. UFH was used more frequently than LMWH in sites in the United States. After adjustment for covariables, rates of hospital death, major bleeding and stroke were significantly lower in patients treated with LMWH than UFH in each ACS subgroup (Figure).

Conclusion: Despite the fact that UFH is used more often, hospital outcomes appeared to be significantly better with LMWH.

Approach after thrombolytic therapy - invasive versus conservative management – Global Registry of Acute Coronary Events


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Background: Thrombolytic therapy reduces the hospital death rate in patients with acute STEMI. The aim of this study was to investigate the impact of an invasive strategy after thrombolytic treatment on outcomes in an unselected group of patients enrolled in the GRACE registry.

Methods: 1766 patients with STEMI were stratified into three groups: early cardiac catheterization (within 12 h of receiving thrombolytic treatment, N=261); late catheterization (≥ 12h after thrombolytic treatment, N=451); and no catheterization (conservative treatment, N=1056). Differences in hospital case-fatality rates and reinfarction were determined using multivariate analysis (conservative treatment group was the referent category).

Results: A total of 41% patients underwent cardiac catheterization. Patients who underwent early catheterization were more likely to undergo PCI than those who underwent late catheterization (Figure). Hospital outcomes for patients in the early catheterization group and in the conservative group were similar. The hospital death was significantly lower in the late-catheterization group compared with the conservative-treatment group (2.0 vs 6.8%, P=0.0002); this difference remained after adjustment for baseline and hospital characteristics (late catheterization mortality OR 0.3, 95% CI 0.13-0.63). However, the likelihood of reinfarction was significantly higher in the late-catheterization group (reinfarction 3.1, 95% CI 1.78-5.23).

Conclusion: Following treatment with thrombolytics, many patients with acute STEMI may gain further benefit from cardiac catheterization and, if necessary, coronary intervention.