Abstract: 30

The influence of Elixhauser comorbidity index on percutaneous coronary intervention outcomes

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Background
Clinical outcomes with respect to the evolution of comorbidity burden in national cohorts of patients undergoing PCI have not been reported.

Purpose
We sought to explore the association between comorbidity burden and peri-procedural outcomes in patients treated with PCI in the National Inpatient Sample (NIS).

Methods
6,601,526 PCI procedures were identified between 2004 and 2014 and comorbidities were defined by the Elixhauser classification system (ECS) consisting of 30 comorbidity measures. Endpoints included in-hospital mortality, periprocedural complications, length of stay and cost. Patients were classified based on their ECS in five categories (ECS I=0, ECS II=0, ECS III=1-5, ECS IV=6-13, ECS V = 14).

Results
Patients with a score over 13 had a 5-fold increase in the odds of mortality (OR:5.13, 95 % CI:4.76-5.54), major bleeding (OR:11.46, 95% CI: 10.66-12.33). and doubled the hospitalisation costs ($31,452 vs $17,566).

Conclusions
Our study of over 6 million PCI procedures demonstrates that only one in eight patients undergoing PCI in the United States are free from significant comorbid disease and suggests that patients with the greatest comorbid burden (as defined by an ECS of >13) have a 5-fold increase risk of in-hospital mortality, a 4-fold increase in in-hospital peri-procedural complications and an 11-fold increase in major bleeding events once differences in baseline patient characteristics are adjusted for. In addition, ECS significantly impacts the length of stay and doubles the healthcare costs. Comorbid burden is an important predictor of poor outcomes after PCI and should be considered as part of the decision-making processes in patients undergoing PCI.