Name(s)	Project Number
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Project Title

A Novel Risk Score for Predicting Readmission in Patients with Chest Pain

Abstract

Objectives/Goals

To establish predictors of readmission in patients admitted with primary complaint of chest pain.

Methods/Materials

The study was performed at Community Regional Medical Center. 150 patients were admitted to the hospital with primary complaint of chest pain over a period of six months. A sample of 660 patients were included in analysis, excluding patients with more than one primary complaint and inadequate data. Patients were identified from emergency department admit nurse registry on daily basis. Demographic and clinical data were collected from medical records and chart review. Three quality assessment tools were used to determine variation in management of chest pain: 1. Rate of Readmission: Defined as admission to hospital for chest pain within 30 days of index admission, 2. Rate of Intervention: Defined as non-invasive (stress test) and invasive (angiogram) procedures; 3. Co-Morbid Disease Score: Defined as presence of co-morbid condition(s) in patients with chest pain. The disease score is a quantitative in nature and based off of the following risk factors: Hypertension, Chronic Kidney disease, Diabetes Mellitus, Hyperlipemia, Low-Ejection Fraction <45%, HbA1C >7, Current Smoking, Previous Cardiac History including CAD, PVD,& CVA, and Anemia <10 g/dl.

Results

Overall about two-third (70%) of admitted patients had non-cardiac causes of chest pain. Higher rate of consult in: acute coronary syndrome patients (p=0.001, OR=7.84), males (p=0.004, OR=1.63), and patients with cardiac history (p=0.001, OR=2.21). Rate of Intervention was higher in patients with typical chest pain (p=0.032, OR=1.81). Higher rate of intervention was associated with decrease readmission rates (p=0.01, OR=0.60).

Conclusions/Discussion

Co-morbid disease score was the single most important readmission predictor in chest pain patients. Non-cardiac causes remains the main underlying etiology in more than two-thirds of admitted chest pain patients, and undergoing intervention was associated with decreased readmission rates. Better assessment of chest pain will lead to better quality of care as well as lessen the burden of healthcare cost. I will present my findings at the 21st World Congress on Heart Disease.

Summary Statement

I discovered a novel risk score to be utilized as an significant assessment tool in the identification of patients at high risk for readmission for chest pain.

Help Received

Used computers in Dr. Bipin Joshi's lab at Community Regional Medical Center. Shadowed Dr.Bipin Joshi on a weekly basis over the course of four years.