Introduction

Coronary artery bypass graft (CABG) surgery continues to be an important procedure for the treatment of coronary artery disease. However, clinically significant stenoses and complete bypass graft occlusion rates remain high, especially among saphenous vein grafts. This is associated with significant morbidity and mortality. Both statin medications and aspirin have been shown in numerous clinical trials to play an important role in the medical management of coronary artery disease following CABG surgery. As per the ACC/AHA guidelines, both statin medications and aspirin have class I indications to support their use indefinitely following CABG, unless contraindication exists. Long-term studies evaluating statin and aspirin usage rates following CABG procedures are lacking.

Purpose

The goal of this study was to assess the usage rates of statins and aspirin in post-CABG patients undergoing coronary angiograms. Further analysis was done to assess the clinical and laboratory differences among the populations based on medication usage group.

Methods

We performed a retrospective analysis of the Thomas Jefferson University Hospital medical and electronic records from April 2003 through August 2011 for all patients with a history of CABG undergoing a diagnostic catheterization for the first time since index surgery. Clinical information, including age, gender, surgical history, medications, indication for catheterization, and relevant laboratory data, was obtained from both inpatient and outpatient electronic medical records.

Exclusion criteria

CABG < three years prior to the index catheterization; lipid panel > thirty days prior to or > seven days after the index catheterization, and incomplete details of the catheterization. 829 patients were identified from the cardiac catheterization database initially, of which 381 were analyzed based on the exclusion criteria.

Statistical analysis

Continuous variables are presented as mean standard deviation (SD), and were analyzed using factorial analysis of variance. Categorical variables are displayed as a percentage of the target population, and were compared using Chi-square statistics. Statistical analysis was performed using SPSS software, version 19 (IBM).

Results

The study population consisted of 381 consecutive patients who presented on average 11 years from the time of CABG. Mean age of our study population was 62 ± 10 years from the time of CABG. Mean age of our study population was 62 ± 10 years from the time of CABG. The study population consisted of 381 consecutive patients who presented on average 11±6 years from the time of CABG. Mean age of our study population was approximately 62 years old. The mean age of patients not on lipid lowering medications remained patent an average of 11 years post-CABG surgery.

Discussion

Statin Usage

In our study population, only 67% of patients were being prescribed a statin at the time of catheterization. Despite the large percentage of patients not on a statin, only 3% of patients had a documented intolerance to statin therapy. Prior studies have demonstrated similar suboptimal usage rates of statins following CABG surgery. Kulik et al found overall statin prescription rates to be 36.9% among 9284 Medicare patients from 1995-2004. There was a significant increase from 13.1% in 1995 to 60.9% in 2004. Nebyl et al also showed similar increase in statin use from 25% in 1995 to 63% in 2002 among thousands of patients in the Duke Database for Cardiovascular Disease. DeBacker et al found among patients undergoing CABG or percutaneous coronary intervention with elevated total cholesterol levels, only 38% were on lipid lowering medications.

Aspirin Usage

The rate of aspirin utilization was also suboptimal at 75%, with only 52% of patients on both aspirin and statin. Patients prescribed a statin had a significantly lower mean LDL (87 ± 106 vs. 162 ± 49; p = 0.024), lower mean total cholesterol (97 ± 105 vs. 166 ± 42; p = 0.000), lower mean HDL (37 ± 14 vs. 41 ± 11; p = 0.001), lower mean Triglyceride (154 ± 134 vs. 118 ± 81; p = 0.007), and lower mean GFR (67 ± 23 vs. 52 ± 23; p = 0.000) compared to patients not prescribed aspirin.

Conclusions

Long-term statin and aspirin use following CABG surgery remains suboptimal despite clear guideline recommendations and clinical trial evidence of their effectiveness. Coordinated efforts are needed to improve long-term medication usage in this subset of high risk patients.

References