COMPARATIVE EFFECTIVENESS REVIEW: DRUG-ELUTING STENTS VERSUS BARE-METAL STENTS FOR ACUTE MYOCARDIAL INFARCTION

Abstracts

PCV142

OBJECTIVES: To estimate the relative impact of drug-eluting stents (DES) versus bare-metal stents (BMS) on death, myocardial infarction (MI), target vessel revascularization (TVR), and stent thrombosis (ST) in patients with ST-elevation acute myocardial infarction (STEMI) by performing comprehensive meta-analyses of randomized controlled trials (RCTs) and observational studies METHODS: We searched Ovid-Medline, Cochrane Library, and conference proceedings for studies comparing outcomes between DES and BMS among STEMI patients presented through September 2009. The quality of studies was evaluated by using the Cochrane’s risk of bias for RCTs and MINORS (Methodological Index for Non-Randomized Studies) for observational studies. The relative risk (RR) using the inverse variance random-effects method for each study outcome was calculated. RCT and observational data were analyzed separately. To assess heterogeneity of RRs among trials, we used the Cochrane–Q-statistic and I²-statistic. Subgroup-analyses were performed by race/ethnicity and publication year. RESULTS: Among 35 observational studies (N = 51,764), DES significantly reduced TVR (RR: 0.48; 95% confidence interval [CI]: 0.41–0.56) and MI (RR: 0.70; 95% CI: 0.60–0.96), without impacting death (RR = 0.80; 95% CI: 0.70–1.11) and ST (RR=0.93; 95% CI:0.72–1.21). Among 35 observational studies (N = 44,849), DES significantly reduced death (RR: 0.85; 95% CI:0.79–0.91) and TVR (RR: 0.61, 95% CI:0.48–0.77), MI and ST were significantly lower in the DES group (within 2 years of follow-up, with no median time differences within 2-year follow-up). There was no evidence of statistical heterogeneity and publication bias. Among RCTs, the quality of the evidence was assessed as “very low”, death and MI as “moderate”, and ST as “low”. The quality of the evidence from observational studies was assessed as “very low” or “low.” CONCLUSIONS: These data in aggregate suggest that using DES in STEMI patients are safe and efficacious but there are differences between RCT and observational data comparing DES and BMS.

BELIEFS ABOUT ANTIHYPERTENSIVE MEDICATIONS IN PRIMARY CARE PATIENTS: VALIDATION OF BELIEFS ABOUT MEDICINES QUESTIONNAIRE (BMQ) IN COLOMBIA

PCV143

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OBJECTIVES: To determine the factor structure of the Beliefs about Medicines Questionnaire (BMQ) and examine the association of medication beliefs with medication adherence. METHODS: Seventeen patients who used antihypertensive drugs participated in semi-standardized interviews. Interviews were recorded and reviewed by two investigators. The medication adherence was measured using the method of count of tablets. An exploratory factor analysis was performed. Multiple linear regression was used to determine whether beliefs about medications were significantly associated with medication adherence. RESULTS: Factor analysis resulted in a two solution, explaining 46.7% of cumulative variance among respondents. The factors were labeled: Overuse (Concerns about the way doctors use medications) and Harm (Beliefs that medications are harmful). Cronbach’s alpha coefficient was 0.71. Beliefs about medications were significantly associated with non-adherence to antihypertensive drugs. CONCLUSIONS: The factorial structure of BMQ was similar to previously reported in other medical conditions. Also these findings suggest that in addition to telling patients how to take their medications, primary care physicians should educate patients about short and long-term effects of the medication and all possible therapeutic alternatives to improve the adherence to antihypertensive medication.

DEVIRING DOCTORS’ PRESCRIBING PATTERNS FROM CLAIMS DATA: AN APPLICATION TO ANTICOAGULANT USE IN PATIENTS WITH NON-VALVULAR ATRIAL FIBRILLATION

PCV144

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OBJECTIVES: Doctors’ practice and prescribing patterns are based on many factors, some of which are not observable. We derived doctors’ prescribing patterns from U.S. claims data to show how it might be related with decisions on anticoagulant use for venous thromboembolism (VTE) treatment. METHODS: Based on U.S. claims data, we assigned doctors’ IDs based on the physician who treated the enrolee for the longest period of time. We examined anticoagulants, antiplatelet medications, rate control drugs and other drugs. We showed that patients were more likely to be compliant to warfarin if their physician’s prescribing pattern favored warfarin. Patients were less compliant if their physician’s prescribing pattern favored injectable anticoagulation or antplatelet. There were no effects on compliance if doctors’ prescribing patterns favored anti-arrhythmics or rate control drugs. CONCLUSIONS: Doctors’ prescribing patterns are important factors for patient compliance. Therefore, failing to control for these patterns in compliance models might lead to omitted variable bias.

IMPACT OF A SEMINAL STUDY ON PRACTICE PATTERNS: STATIN USE BEFORE AND AFTER THE JUPITER STUDY

PCV145

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OBJECTIVES: To examine whether there was a change in statin use patterns after release of results from the JUPITER study using a nationally-representative Electronic Medical Record (EMR) database. METHODS: The EMR database reviewed was the Medical Quality Improvement Consortium (MQIC) database from GE. This database contains EMR data collected from over 11,000 ambulatory providers in the United States and includes over 12 million patients as of April, 2009. Records were reviewed for the total database before and four months after. Among adults ≥ 18 years of age, new statin usage (4 months before and after) and switches involving rosuvastatin, the statin in the JUPITER study, were counted. RESULTS: Of over 9.4 million adults, over 1.2 million (13%) are recorded as taking a statin. The proportion of statin usage remained consistent before and after JUPITER with percentage of use among the patients as follows: rosuvastatin (11%), simvastatin (32%), atorvastatin (49%), and other approved statins (9%). Conclusions: The area of statin prescription product (presents add to more than 100 as patients may be on more than one product). When comparing the proportion of reported new statin usage 4 months pre/post JUPITER among the new statin users, there is an increase in simvastatin, from 26% to 30%, but no significant differences in the other medications. CONCLUSIONS: Although JUPITER is already considered a seminal study by many, it has not yet impacted clinical practice, suggesting a time lag in getting evidence into practice. This EMR database provides a valuable data source to monitor real-time, real-world prescribing practices, and will permit further exploration of relevant patient characteristics, such as CRP and LDL levels, and outcomes that is not possible using administrative datasets.

STATIN USE BEFORE AND AFTER CABG PROCEDURE

PCV146

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OBJECTIVES: Statin therapy has been shown to reduce disease progression following coronary artery bypass graft procedure (CABG). Recommendations include low-fat diet and cholesterol-lowering medications after bypass surgery to reduce subsequent graft attrition. The objectives of the study were to 1) examine the percent of participants who were prescribed a statin within a month post CABG procedure; 2) identify predictors of statin use post CABG METHODS: Participants with CABG anytime during 2008–2009 and their statin use pre-post CABG were identified using de-identified administrative medical claims and administrative pharmacy claims respectively. Date of CABG was considered the index date for the study analysis. The variables to predict a new script for statin included use of statin before CABG, age, gender, physician specialty, other co-morbidities, and the number of other medications. A logistic regression was used to estimate the likelihood of statin utilization post CABG. RESULTS: The study cohort consisted of 10,418 patients who underwent CABG during the study period. The mean age of the cohort was 70.3 ± 11.2 years, and 75% of the patients were male. During the 1-year period before CABG surgery, 40% of patients utilized prescription statin therapy. 47% of patients filled a statin prescription within 1 month of CABG procedure. 24% of the patients did not have prescription claims for statins at any time post CABG. The likelihood of filling a prescription for statin post CABG was 5.91 (95% CI: 4.89–6.21) higher in patients who utilized a statin prior to CABG. Males were 1.36 times more likely to utilize a statin than females (95% CI: 1.22–1.51). CONCLUSION: A significant proportion of patients do not utilize statins after CABG, missing an effective drug therapy. The use of statin before CABG is a significant predictor of statin use post-CABG.

NOVEL QUALITY ASSURANCE ANALYSIS REVEALS PREVIOUSLY UNDETECTED DEFICIENCIES IN A POINT OF CARE DEVICE THAT MEASURES THE INTERNATIONAL NORMALIZED RATIO

PCV147

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OBJECTIVES: Measures used to make clinical decisions are assessed by quality assurance (QA) programs. Our group’s research suggests standard QA analyses can fail to provide relevant clinical information and may be misleading. We compared a novel clinically-based QA analysis to previously conducted standard QA analysis of INR measurements by point-of-care (POC) devices in our anticoagulation clinic. METHODS: Previously analyzed QA data, collected January, 2006 through June, 2008 were obtained. Two INR samples were obtained from each patient at the same anticoagulation clinic visit: one venous sample analyzed by our core laboratory (considered the
UTILIZATION OF SECONDARY PREVENTIVE MEDICATIONS FOLLOWING ACUTE MYOCARDIAL INFARCTION (AMI): A RETROSPECTIVE COHORT ANALYSIS OF A MEDICAID POPULATION

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OBJECTIVES: To assess the utilization of secondary preventive medications after an acute myocardial infarction (AMI) in a state Medicaid population. METHODS: The study was a retrospective cohort analysis using a state Medicaid claims database. The study cohort was identified based on inpatient claims for discharges with either a primary or secondary diagnosis code for AMI (ICD-9 code: 410.xx) between January 1, 1998, and December 31, 2000. The study cohort was restricted to patients who were <65 years old and were enrolled in the traditional fee-for-service program. Utilization of secondary preventive medications was considered appropriate if patients filled at least 1 prescription for each of the recommended medications (angiotensin-converting enzyme (ACE) inhibitors/furosemide, beta-blockers, and statins) in the 90 days after discharge. Logistic regression analysis was used to identify demographic and clinical predictors associated with the recommended utilization of secondary preventive medications. RESULTS: The final study cohort consisted of 732 patients discharged following hospitalization for AMI. The mean age of the cohort was 51±7.9 years and there were a higher proportion of females (52%) and whites (84.6%) in the study sample. Only 43.25% of the patients appropriately utilized all the recommended medications after AMI. Regression analysis indicated that use of prescription transulamin coronary angioplasty (PTCA) procedures during the hospitalization (OR = 2.64, 95% CI:1.78–3.89); having a diagnosis of hyperlipidemia (OR = 1.71; 95% CI:1.71–2.51), hypertension (OR = 2.00; 95% CI:1.18–3.39) or asthma (OR = 0.36; 95% CI:0.37–0.87), and utilization of the recommended medications prior to hospitalization (OR = 2.42, 95% CI:1.30–4.50) were significant predictors of appropriate utilization of secondary preventive medications. CONCLUSIONS: Post-AMI patients in a state Medicaid program had sub-optimal utilization of secondary preventive medications; however, the utilization rates were higher than in previous studies that primarily focused on an older cohort of patients.

TREATMENT PATTERNS, RESOURCE UTILIZATION AND COSTS OF PATIENTS WITH PULMONARY ARTERIAL HYPERTENSION IN THE US

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OBJECTIVES: Oral therapies that target nitric oxide signaling (sildenafil) or endothelin signaling (bosentan and ambrisentan) are used to treat pulmonary arterial hypertension (PAH). We studied the treatment patterns, resource utilization, and costs associated with these three oral therapies in a US population of commercially insured patients. METHODS: This was a retrospective study using claims from a large health insurance database. Commercial and Medicare Advantage patients with claims indicating PAH between January 2005 and December 2008 were included. PAH treatment was for ambrisentan, bosentan, or sildenafil were selected for study inclusion. PAH treatment patterns, PAH-related utilization, and PAH-related costs were assessed during a minimum 6 month follow-up period. RESULTS: A total of 727 patients were