selection bias between groups. Administrative claims and medical records were utilized to assign patients NCEP risk status and corresponding LDL-C goal. Percent changes in lipid values were computed by comparing pre/post-initiation levels. Adjusted LDL-C change and goal attainment were evaluated using OLS and logistic regression techniques, respectively. RESULTS: A total of 453 patients (217 rosuvastatin/236 atorvastatin) were identified. Mean dose and therapy duration for rosuvastatin were 11mg and 61 days compared to 15mg and 79 days for atorvas-
tatin. Patients receiving rosuvastatin compared to atorvastatin had significantly greater mean percent reductions in LDL-C (35% vs. 26%), total cholesterol (26% vs. 20%), and non HDL-C (33% vs. 25%); all p < 0.05. After adjusting for age, gender, baseline LDL-C, NCEP risk status, and therapy duration, reductions in percent LDL-C continued to be statistically significant. No statistically significant differences were found in HDL-C and triglycerides between groups. Percentages of patients achieving their LDL-C goal with rosuvastatin and atorvastatin were 74% and 65%, respectively. After adjusting for baseline differences between groups, significantly (p < 0.05) more patients were observed to achieve their LDL-C goal with rosuvastatin (OR < 2.48, 95% CI: 1.10–3.17). CONCLUSION: Rosuvastatin was associated with statistically significant reductions in LDL-C, non HDL-C, and total cholesterol compared to atorvastatin. Furthermore, rosuvastatin patients were nearly twice as likely to attain their LDL-C goal compared with atorvastatin when adjusted for baseline differences between groups.

ONE-YEAR COSTS FOR ACUTE CORONARY SYNDROME—AN INTEGRATED HEALTHCARE SYSTEM PERSPECTIVE
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OBJECTIVES: Little information exists regarding costs of acute coronary syndrome (ACS) in the setting of an integrated health care program. The purpose of this study was to estimate total costs of new onset ACS from index hospitalization through one year. METHODS: This descriptive analysis consisted of Kaiser Permanente Medical Care Program patients age > 40 years and hospitalized with an ACS diagnosis during January 1, 1999 to December 31, 2000. Patients were required to be without ACS diagnoses in the six months before the index event. Follow-up continued for one year. A gender and age matched control group was created at a 5:1 ratio (control: ACS patient). Costs expressed are those incurred by the health plan. RESULTS: In total, 14,852 patients met inclusion criteria (7919 myocardial infarction [MI], 6933 unstable angina [UA]). Mean age was 67.2 years, and 63.9% were male. During the first year after the index event, rehospitalization occurred in 13.5% of patients for MI, 17.2% for UA, and 38.5% for all coronary heart disease. Index hospitalization costs were $6802 for ACS cases. Total costs (mean ± SD) from discharge through one year were $20,743 ± 30,159 ($12,163 median for ACS cases and $3679 ± 12,495 ($1089 median for controls). Males and females with AS had similar mean costs ($20,894 ± 31,179 vs. $20,475 ± 28,262) while ACS cases age >65 ($21,354 ± 27,904) had somewhat higher mean costs than those age <65 years ($19,862 ± 33,126). Percent of total costs by type of resource used (clinical, hospital, and pharmacy, respectively) for ACS cases was: 19.4%, 70.3%, 6.2%; for controls: 38.4%, 43.5%, 13.0%. CONCLUSIONS: Hospitalization for ACS was associated with substantial costs for the index event as well as large additional costs through one year. The largest contributor of costs was hospital-related (70%). Rehospitalization also occurred frequently in ACS patients.

CUMULATIVE EXPOSURE TO CYCLOOXYGENASE-2 INHIBITORS AND CARDIOVASCULAR RISK
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OBJECTIVES: Little is known about the association of length of exposure to COX-2 inhibitors (COX-2s) and the risk of cardiac events. This study determines the impact of extended exposure to COX-2s among high risk Medicaid patients, and is based on a previous propensity adjusted model that showed no added risk of cardiac events in COX-2 users among NSAID users, in this Medicaid population. METHODS: Selecting COX-2 users alone, we analyzed all medical and prescription claims of all continuously enrolled Medicaid patients, with at least one prescription for a COX-2 between January 1, 2000 and January 1, 2003, and no such prescriptions in the first six months. We used both direct adjustment and propensity score methods, and assessed length of exposure to COX-2s as a risk factor for post-use cardiac events, defining risk as a categorical variable (<30, 30–59, 60–89, 90–119, and >120 days), then as a continuous variable (divided by 30). The models are adjusted for age, gender, race and location (urban/suburban/rural), and clinical risk factors. RESULTS: A total of 1784 patient used COX-2s, 25% for less than 30 days. From the categorical analysis, there are significant increases in the likelihood of a post-use cardiac event given increased use compared to less than 30 days of cumulative exposure. From the analysis of exposure to COX-2s as a continuous variable, in the propensity-adjusted model, each 30-day increase in exposure corresponds to a concomitant but non-significant 2% increase in risk of cardiac events. For the direct adjusted model, there is a concomitant 5.5%, significant increase in post-use cardiac events. CONCLUSIONS: Among Medicaid COX-2 users, the risk of cardiac events is associated with longer exposure to COX-2s only when exposure is categorized in 30-days increments, not when used as a continuous variable, suggesting a nonlinear relationship between exposure and events.

ECONOMIC BURDEN OF OSTEOPOROSIS-RELATED FRACTURES IN MEDICAID
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OBJECTIVE: For women over age 45 that experience osteoporosis-related fractures (OPFx), Medicaid covers about 25% while Medicare covers nearly one-half of the related-health care cost. This study estimated the direct cost of OPFx to state Medicaid budgets. METHODS: This retrospective analysis utilized Medicaid claims databases from three states. The databases contained the claims experience of approximately eight million Medicaid recipients. The study sample consisted of Medicaid beneficiaries with at least one claim containing an osteoporosis diagnosis (733.0x) between January 1, 1999 and December 31, 2001. Beneficiaries with a fracture and a diagnosis of osteoporosis were assigned to the case cohort; a propensity score-based matching method was used to select a cohort of controls among a pool of beneficiaries with osteoporosis, but without a fracture. An exponential conditional mean model was used to estimate the incremental annual cost associated with fracture.
RESULTS: The OPFx cohort (n = 7626) and a 1:1 matched control group with osteoporosis, but without a fracture were identified. The OPFx cohort was 85.8% female, had an average age of 65, were 53.2% White and 11.1% Asian, and 48.9% were dual-eligible for Medicare. There were significant increases (all p < 0.05) from the pre-period to study-period for this cohort in the proportion that had at least one hospital admission (12.0% vs. 22.3%), nursing home admission (8.7% vs. 18.2%) or ER visit (28.2% vs. 45.9%); in contrast, the control cohort had very little variation in utilization. The regression-adjusted incremental cost in the year following fracture was estimated at $4007 per osteoporosis patient. The estimated incremental cost was $5370 for the subset of patients who were dual-eligible. CONCLUSIONS: Osteoporosis-related fractures exhibit a tremendous humanistic and economic toll in patients. The economic burden of OPFx on state Medicaid budgets is substantial. Preventative strategies for avoiding fractures could help ameliorate some of this burden.

ECONOMIC IMPACT OF CARDIOVASCULAR EVENTS IN NEWLY DIAGNOSED TYPE-2 DIABETES PATIENTS

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OBJECTIVES: To estimate impact of cardiovascular events on annual health care costs in newly diagnosed type-2 diabetes patients. METHODS: Patients with newly diagnosed type-2 diabetes (index event) between January, 1999 and December, 2001 were identified from an employer claims database using ICD-9 codes. In the absence of a diagnosis, patients were included if they had at least two claims for oral hypoglycemics in a six-month period. A cardiovascular event was defined as emergency/inpatient claims for one or more of 16 cardiovascular complications identified. Patients with evidence of a cardiovascular event in the 12 months preceding the index event were excluded. Costs were adjusted to 2002 dollars and then annualized. A log-transformed model was developed to estimate the impact of cardiovascular events on annual health care costs. Patient demographics, co-morbidities, concomitant medications and treatment groups were used as covariates. RESULTS: Based on the selection criteria, the study cohort included 57,563 newly diagnosed type-2 diabetes patients. The average patient age was 59.5 years and 50.7% were female. The mean adjusted annual health care cost per patient was $11,994.33. Annual cost was distributed across emergency room (2.49%), outpatient (45%), inpatient (29.75%) and prescription drug (22.54%) costs. Annual costs were significantly greater in women (17.1%; p < 0.001) and significantly lower in absence of any complications (−14.5%; p < 0.001). About 12% of the type-2 diabetes patient population reported one or more cardiovascular events. The mean number of cardiovascular events per patient per year was 0.067. A cardiovascular event contributed to a significant increase (129%; p < 0.001) in annual costs. The average annual cost per patient ranged from $9,507 (zero CV event) to $65,130 (5+ CV events). CONCLUSIONS: Cardiovascular events contribute significantly to health care costs in the type-2 diabetes patients.

IMPACT OF ESTIMATION TECHNIQUE ON MEDICAL COST ESTIMATES FOR OVERACTIVE BLADDER TREATMENTS

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OBJECTIVE: To evaluate the sensitivity of overactive bladder (OAB) medical cost estimates to estimation technique. METHODS: Data were from de-identified medical and pharmacy claims of patients aged ≥18 years enrolled in a large US health plan. Inclusion criteria were: ≥1 claim with OAB-related ICD-9-CM codes recorded between January 1, 2001 and December 31, 2001; initiation of immediate-release oxybutynin (OXY IR), extended-release OXY (OXY ER), or extended-release tolterodine (TOL ER); and continuous health plan coverage for six months before and 12 months after treatment initiation. Models were based on logged 12-month medical costs, with treatment, sex, age, geographic region, baseline costs, and comorbidities as covariates. Estimation techniques compared were ordinary least squares (OLS) with smearing estimator, treatment regressions estimating the correlation between cost and treatment, and two-stage instrumental variables (IV) regressions. Selectivity-corrected models were estimated for OXY IR and OXY ER, with TOL ER as the referent. RESULTS: Association of treatment with cost varied with estimation technique. Comparing costs of TOL ER and OXY ER, coefficients were OLS, 0.582 (t = 1.86, p = 0.063); treatment regression, 1.108 (Z = 3.93, p < 0.001); IV regression, 1.878 (Z = 3.27, p = 0.001). A negative correlation between treatment and cost (p < 0.3842, p < 0.001) suggested that OLS estimates underestimated cost differences between TOL ER and OXY ER therapies. OXY ER patients had one-year predicted medical costs 191% higher (treatment regression) or 455% higher (IV regressions) than did TOL ER patients. The treatment regression correlation between the TOL ER and OXY IR treatment groups was significant and negative, suggesting that OLS also underestimated differences in cost between those cohorts. Treatment regression analysis revealed that costs for OXY IR patients were 48% higher than those for TOL ER patients. CONCLUSIONS: Failing to adjust for selection bias when comparing OAB treatment costs may lead to biased estimates of cost differences between therapies.