RISK FACTORS AND OUTCOMES OF SURGICAL SITE INFECTIONS IN DIABETICS UNDERGOING CARDIAC SURGERY

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OBJECTIVE: Previous studies on risk factors for postoperative surgical site infections (SSI) have identified presence of diabetes as a major risk factor for development of SSI following cardiac surgery. However, why certain diabetics are more likely to develop SSI than others is unknown. The purpose of this study was to identify risk factors and outcomes of SSI in diabetics undergoing cardiac surgery. METHOD: Nested, case-control study. Patients with diabetes undergoing coronary artery bypass or valve replacement surgery at St. Luke’s Episcopal Hospital, Houston, Texas, who experienced a post-operative SSI (n = 71) in 2002–2004 were compared to randomly selected, uninfected controls (n = 103) whom underwent similar surgery during the same time period. Clinical data was collected to determine risk factors and outcomes using univariate statistics and multivariate logistic regression. RESULTS: History of cardiac disorders (congestive heart failure, stroke, angina, or myocardial infarction) (OR = 1.589; 95% CI = 1.132–2.230; p = 0.0075) and obesity (OR = 2.849; 95% CI = 1.241–6.542; p = 0.0136) were identified as significant independent risk factors for SSI in diabetics undergoing cardiac surgery. Cases were hospitalized an average eight-days longer than uninfected controls (p = 0.0006) and experienced twice as many complications requiring reoperation (10.6% vs. 21%; p = 0.037). CONCLUSION: Cardiac history and obesity were identified as significant risk factors for SSI in our diabetic patient population. SSI significantly increased hospital length of stay in our diabetic population.

9301 COST-EFFECTIVENESS OF LONG-TERM THERAPY WITH CLOPIDOGREL FOLLOWING PERCUTANEOUS CORONARY INTERVENTION: A SWEDISH ANALYSIS OF THE CREDO-TRIAL

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OBJECTIVES: The CREDO trial demonstrated the clinical efficacy of 12-month therapy with clopidogrel, with a 27% relative risk reduction (RRR) (p = 0.02) combined risk of death, MI, or urgent target revascularization in patients undergoing percutaneous coronary intervention (PCI) and being treated with ASA. The purpose of this study was to evaluate the long-term cost-effectiveness of 12-month versus 28-day therapy with clopidogrel in Sweden. METHODS: A Markov model was developed, enabling modeling over the longer term. A hypothetical cohort of patients in a post-PCI state was assumed to have certain risks of suffering one of the endpoints of the CREDO trial: stroke, MI or death. First-year risks were taken from the observed rates of the CREDO trial while risks for following years were estimated based on epidemiological data, provided by the Centre for Epidemiology at the Swedish National Board of Health and Welfare. Cost data was collected from published sources. The perspective was that of society. Effectiveness was measured as the number of life-years gained from long-term treatment with clopidogrel. Cost-effectiveness acceptability curves were created using bootstrapping to estimate parameter uncertainty and Monte Carlo simulation to estimate the effect of this uncertainty in the model. RESULTS: The model predicted a mean survival of 12.35 years in the 12-month arm compared to 12.28 in the 28-day arm, an incremental gain of 0.065 life-years. The increase in survival came at a predicted incremental cost of 171€, resulting in an incremental cost-effectiveness ratio (ICER) of 2637€. If only direct costs were considered, the ICER was 7588€. If costs due to increased survival were included, the ICER was 14,681€. Results were insensitive to variations in costs and discount rates. CONCLUSIONS: The predicted cost-effectiveness ratio of long-term treatment with clopidogrel in patients undergoing PCI is well below the threshold values currently considered cost-effective.

ASSOCIATION BETWEEN LONG-TERM USE OF NSAIDS/COX-2 INHIBITORS AND CARDIOVASCULAR RISK–A RETROSPECTIVE ANALYSIS USING THE VETERAN AFFAIRS (VA) DATABASE

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The search for less gastrointestinal toxic nonsteroidal anti-inflammatory drugs (NSAIDs) led to the introduction of the selective cyclooxygenase-2 (COX-2) inhibitors. However, with this introduction into the market, there have been concerns regarding their safety, particularly cardiovascular safety. OBJECTIVE: The purpose of this study was to assess the cardiovascular risk (events included: myocardial infarction, stroke, and myocardial infarction-related deaths) associated with long-term use (after 180 days of exposure) of nonselective NSAIDs and COX-2 inhibitors. METHODS: A retrospective analysis of the Veterans Integrated Service Network 17 Veteran’s Affairs (VA) database was conducted. Medicare data and Department of Health mortality data were incorporated to capture events occurring outside the VA health care network. Patients 35 years of age and older receiving celecoxib, rofecoxib, ibuprofen, etodolac, and naproxen from January 1, 1999 through December 31, 2001, were included. Multivariate Cox proportional hazard models were used to analyze the relationship between cardiovascular risk and NSAID/COX-2 inhibitor use while adjusting for various demographic and co-morbidity factors. RESULTS: We identified 6814 long-term exposure periods and 42 cardiovascular events over the study period. Compared to long-term ibuprofen use, long-term use of celecoxib was associated with a 3.64 fold (95% CI 1.36–9.70; p = 0.01) increase in cardiovascular risk. Long-term use of rofecoxib was associated with a 6.64 fold (95% CI 2.17–20.28; p < 0.01) increased risk when compared to long-term ibuprofen users. Long-term exposure to naproxen and etodolac was not associated with a cardioprotective or cardioprotective effect when compared to long-term ibuprofen users. CONCLUSIONS: The findings of this observational study along with recent clinical trial results suggest that long-term exposure to COX-2 inhibitors is associated with an increased cardiovascular risk. In addition, the study results do not show that naproxen or etodolac provide a cardioprotective or cardioprotective effect.

Cost Studies II

COST OF URINARY INCONTINENCE IN GERMANY: RESULTS FROM PROSPECTIVE URINARY RESEARCH (PURE)

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OBJECTIVE: Estimate direct medical costs of Urinary Incontinence (UI), namely Stress Urinary Incontinence (SUI), Mixed...
Urinary Incontinence (MUI) and Urge Urinary Incontinence (UUI) in Germany over 12 months. METHODS: PURE is an ongoing six-month, pan-European, prospective observational study to determine direct treatment costs for women with UI. Analysis includes 2175 German patients (mean age 65.1 years) with SUI (n = 487), MUI (n = 1457) or UUI (n = 231) symptoms. Participating investigators are office-based primary care physicians (n = 110), urologists (n = 185), gynaecologists (n = 100) and others (n = 4). Resource use data for cost estimation was collected retrospectively including medication, conservative treatment, diagnostic and surgical procedures, incontinence products and visits to health care providers for 12 months preceding baseline. Unit costs for 2004 from the perspective of statutory health insurance (SHI) were used. RESULTS: Average total annual costs for women with UI ranged from 413.0€ for SUI, 438.0€ for UUI to 585.2€ for MUI. Costs were primarily attributable to pad costs for SUI (223.5€), MUI (300.3€) and UUI (235.0€). A total of 52.4% of pad costs were incurred by SHI, with remaining costs being paid out-of-pocket. Average drug costs were 47.4€ for SUI, 86.1€ for MUI and 107.2€ for UUI. Patients receiving UI surgery had average surgical costs of 3326.9€. On average, 26.9% of patients with SUI, 44.0% with MUI and 52.8% with UUI were treated with UI medication, while 10.3% of patients with SUI, 16.8% with MUI and 17.5% with UUI were ever treated with surgery. Pad use ranged from 85%, 87.2% to 89.2% in SUI, MUI and UUI patients, respectively. CONCLUSION: Patients with MUI were found to incur the highest costs compared to patients with other UI subtypes. Patients with SUI were treated with UI medication not indicated for use in SUI. Incidence of previous UI surgery was considerable in this treatment seeking population.

**CS6**

**TREATMENT OF INSTITUTIONALIZED PATIENTS WITH ALZHEIMER’S DISEASE WITH QUETIAPINE: A COST-EFFECTIVENESS EVALUATION**

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OBJECTIVE: Over 75% of individuals with Alzheimer’s disease (AD) residing in nursing homes have behavioral and psychological signs of dementia (BPSD). Quetiapine is an atypical antipsychotic that has demonstrated effectiveness in the treatment of BPSD. This analysis examines the health economic implications of treating patients with AD and BPSD with quetiapine at a dose of 200 mg per day. METHODS: A discrete event simulation was developed to compare treatment of institutionalized AD patients in the US with quetiapine relative to no pharmacological treatment. The model follows individuals over one year, tracking changes in BPSD and the resulting influence on costs. Effectiveness and treatment persistence estimates are based on a randomized, double-blind trial comparing quetiapine to placebo, while BPSD related nursing home costs are derived from the Minnesota Case Mix Research Database and published information. Costs in the simulation, which are reported in 2004 US dollars, include nursing home per diems, physician visits, psychiatric and behavioral services, and treatment with quetiapine. The primary effectiveness outcome is time without clinically significant BPSD. RESULTS: Untreated patients incur costs averaging $49,350 per year, clinically significant BPSD apparent 87% of the time. Treatment with quetiapine costs $1142 per year, but this is entirely offset in savings from other areas, resulting in net savings of $44 per year. At the same time, patients spend seven fewer weeks with clinically significant BPSD. In repeated simulations, quetiapine dominated no treatment in almost 60% of replications. In 94% of replications, quetiapine was either dominant or led to incremental costs per BPSD year avoided of under $5000. Sensitivity analyses showed that variations in BPSD-specific nursing home costs had the strongest impact on outcomes. CONCLUSIONS: These analyses indicate that quetiapine in patients with AD and BPSD is cost-effective and may even lead to overall health care system savings.

**CS7**

**OVERCOMING SAMPLE-SELECTION CHALLENGES IN ECONOMIC COMPARISONS OF DRUG AND NON-DRUG THERAPY: THE CASE OF OVERACTIVE BLADDER**

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OBJECTIVE: To assess whether comparable populations can be created to assess the economic impact of different treatment strategies for overactive bladder (OAB). METHODS: Data were obtained from the PharMetrics Patient-Centric Database on patients diagnosed with OAB between January, 2001 and December, 2002. Patients were stratified into those receiving a pharmacological therapy for OAB (ie, long-acting tolterodine, immediate- or extended-release oxybutynin) versus medical management alone. Patients were matched 1:1 by the estimated propensity score for OAB pharmacotherapy. A logistic regression model included selected demographic and clinical characteristics. A fitted probability of receipt of OAB medication was generated for all patients, and matching was performed based on a difference of ± 0.01 in this probability. Differences in patient characteristics as well as outcomes and costs during follow-up were assessed using descriptive statistics (chi-squares for proportions, Wilcoxon rank-sum tests for continuous variables). RESULTS: A total of 29,992 matched pairs were identified. Patients averaged 50 years of age, and 75% were women. After matching, differences in all patient characteristics were nonsignificant, with the exception of physician specialty. Both groups had a pre-index Charlson Comorbidity Index of 0.70. The incidence of urinary tract infection was higher in the group receiving medical management alone (27.4% vs. 20.2%, p < 0.0001). Mean (± SD) OAB-related costs were also significantly higher in the medical management group ($454 ± $2559 vs. $253 ± $1985, p < 0.0001). Pharmacy costs were higher in the drug-treated group, but total costs (OAB-related and unrelated) were numerically similar ($8666 ± $22,757 vs. $8674 ± $20,496), suggesting that high pharmacological costs of treatment are offset by reduction in other OAB- and infection-related costs. CONCLUSIONS: Creation of comparable cohorts is feasible, even when treatment interventions differ substantially. Furthermore, OAB pharmacotherapy appears to be cost-neutral in the management of the condition, and may impart selected clinical benefits.

**CS8**

**ECONOMIC EVALUATION OF ONDANSETRON VERSUS DIMENHYDRINATE FOR PREVENTION OF POSTOPERATIVE VOMITING IN CHILDREN**

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OBJECTIVE: Postoperative vomiting (POV) is a distressing complication and its incidence ranges from 34%–90% in children undergoing strabismus surgery when antiemetics are not administered prophylactically. This study compares the economic benefit of ondansetron versus dimenhydrinate as antiemetics administered prophylactically in children undergoing strabismus surgery. METHODS: This study, conducted at Toronto’s Hospi-