COST-EFFECTIVENESS OF BARIATIC SURGICAL PROCEDURES VERSUS NO TREATMENT FOR MORBID OBESITY

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OBJECTIVES: Obesity is a global epidemic and obesity-related comorbidities pose health risks alongside placing financial burden on the health care system. Bariatric surgery has been shown to reduce weight, improve quality of life, and reduce mortality for morbidly obese individuals. The objectives of this evaluation are to assess the cost-effectiveness and cost-utility of bariatric surgery (gastric bypass (GBP) and laparoscopic adjustable gastric banding (LAGB) procedures) versus no treatment for morbidly obese patients (body mass index ≥ 40 kg/m²).

METHODS: A combined (decision and Markov) model was developed to compare the costs and outcomes of bariatric surgery with no treatment for morbidity over a 15-year time horizon. This evaluation was conducted from the perspective of the Ontario Ministry of Health and Long-Term Care. Data on BMI reduction, post-operative complications and mortality, costs of disease management, and healthcare-related quality of life were used based on a literature review of national and international sources. Univariate and probabilistic sensitivity analyses were conducted. RESULTS: In the base case analysis, GBP dominated LAGB and no treatment (cheaper and more effective in terms of life-years (LYs) gained and quality-adjusted life-years (QALYs) gained). Univariate and probabilistic sensitivity analyses varied important model parameters such as treatment costs, probability of complications, and utility estimates did not impact this conclusion showing that the economic model is robust in nature. CONCLUSIONS: This evaluation showed that gastric bypass is the cheapest and most effective treatment for morbidly obese individuals in terms of cost per LY gained and cost per QALY gained.

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CLINICAL-ECONOMIC EVALUATION OF AZACITIDINE VERSUS DECITABINE FOR TREATING PATIENTS WITH MYELODYSPLASTIC SYNDROMES (MDS)

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OBJECTIVES: Azacitidine and decitabine are used to treat patients with myelodysplastic syndrome (MDS). We sought to determine their cost-effectiveness.

METHODS: We developed a Markov process model (1-month cycles) to track hypothetical cohorts of MDS patients treated with azacitidine or decitabine over 2 years. Model structure and parameters were derived from published literature, product labels, clinical trial and real-world data, and drug and medical services cost databases. Four health states were modeled: 1) MDS with transfusion dependence; 2) MDS with transfusion independence; 3) progression to acute myelogenous leukemia (AML); and 4) death. Cost-effectiveness was measured incrementally as 1) cost per quality-adjusted life year (QALY); 2) cost per month of transfusion independence; and 3) cost per case of AML progression avoided. The model used a third-party payer perspective with 2009 US costs. One-way sensitivity analyses were performed on key model parameters. RESULTS: The total number of QALYs (per 1000 patients) attained by azacitidine-treated patients exceeded those attained by decitabine-treated patients (1041 ± 870). The total number of patient months with transfusion independence was higher for azacitidine vs. decitabine (8328 ± 6224). More azacitidine-treated patients avoided progression to AML compared to decitabine-treated patients (595 ± 284). The per patient costs for azacitidine were lower than for decitabine ($150,322 ± 186,212). Overall, treating a patient with azacitidine cost $15,890 less than treating a patient with decitabine, and confers 0.171 additional QALYs. ($150,322 vs. $166,212). Overall, treating a patient with azacitidine cost $15,890 less than treating a patient with decitabine, and confers 0.171 additional QALYs. These findings demonstrate that azacitidine costs less than decitabine and provides greater clinical benefit across key outcomes of interest. These conclusions accentuate the role of azacitidine as a major asset in providing cost-effective care for MDS patients.

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COST-EFFECTIVENESS OF THE USE OF POSACONAZOLE FOR PROPHYLAXIS OF INVASIVE MYCOSES COMPARED TO FLUCONAZOLE AND ITRACONAZOLE IN PATIENTS WITH PRONOUNCED NEUTROPENIA

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OBJECTIVES: It was the clinical economic study comparing posaconazole and fluconazole/itraconazole (12.9 times difference), due to higher posaconazole price. In the treatment of IM overall expenditures in the group of posaconazole were lower compared to those in the group of fluconazole/itraconazole (2.2 times difference), due to decreased risk of IM development in prophylactic use of posaconazole. The analysis of the main scenario demonstrates that the regimen of posaconazole use for prophylaxis was a less expensive and more effective (dominating) compared to that with fluconazole/itraconazole. Alternative scenario analysis, where IM and mortality rates were equal in both groups of prevention, showed dominating character of posaconazole prophylaxis strategy. One-sided sensitivity analysis demonstrated that when posaconazole was used as a prophylaxis and had more influence on incremental cost-effectiveness ratio, than the changes due to costs for antifungals purchase. CONCLUSIONS: Posaconazole prescription was economically beneficial compared to fluconazole/itraconazole for prophylaxis of IM in the studied patient population.

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OPIOID USE AND COSTS IN PATIENTS WITH PAINFUL DIABETIC NEUROPATHY TREATED WITH PREGABALIN OR STANDARD-OF-CARE

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OBJECTIVES: To evaluate opioid use and medical services utilization and associated costs among patients with painful diabetic peripheral neuropathy (pDPN) who initiated treatment with pregabalin (Pgb) versus standard of care (SOC) treatments.

METHODS: Retrospective cohort analysis using the Thomson Medstat MarketScan commercial and Medicare supplemental insurance databases (2005-2007) to identify patients prescribed Pgb vs SOC (venlafaxine, duloxetine, gabapentin, tricyclic antidepressants) during 2006 subsequent to a diagnosis of DPN (ICD-9-CM codes 250.6x or 357.2x). Patients initiated on Pgb were propensity-score matched (1:1) with SOC patients on demographics, Charlson comorbidity score, and prior medication, inpatient, and outpatient costs. Time-to-opioid prescription was assessed using a Cox-Proportional hazards model and the proportion of patients dispensed opioids, number of opioid prescriptions, number of days of opioid therapy, and opioid, overall prescription, and total medical service utilization costs in the 12-month post-index period were compared (paired t-tests) between Pgb and SOC. RESULTS: A total of 2,000 patients were evaluated (Pgb = 1000, SOC = 1000). 54% were male in both groups, with mean ages of 64.0 ± 11.2 years (Pgb) and 63.6 ± 11.9 years (SOC) and no difference in Charlson Comorbidity Index scores (Pgb = 3.7 ± 1.6, SOC = 3.7 ± 1.6). The proportion of patients with at least one opioid prescription and prescription costs per patient were $5471 ± $3916 versus $5271 ± $4172 (p = 0.36). The time-to-first opioid prescription was 148.5 ± 104.4 days versus 143.7 ± 101.7 days (p = 0.58) in the Pgb and SOC cohorts respectively, among opioid users. Total opioid-related prescription costs per patient were $21 ± 579 versus $23 ± 122 (p = 0.16) and overall prescription costs per patient were $5471 ± $3916 versus $5271 ± $4172 (p = 0.36) for Pgb and SOC, respectively. Total medical service utilization costs were $18,277 ± $33,299 for Pgb versus $19,639 ± $33,637 for SOC (p = 0.40). CONCLUSIONS: pDPN patients initiating Pgb experienced similar opioid use, and did not show differences in opioid, overall prescription and total medical resource utilization costs, compared with the SOC cohort.

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OBESITY AND HEALTH CARE COSTS AND UTILIZATION IN THE VETERANS AFFAIRS POPULATION

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OBJECTIVES: The escalating burden of obesity is of concern to patients, health care professionals, and policy makers. Health care costs and utilization over an eight-year time period was examined in overweight and obese individuals compared to normal weight individuals within the Veterans Affairs (VA) population. METHODS: This is a retrospective cohort study of medical and pharmacy records from the VA databases between 2000-2007. Cohorts were stratified based on age and BMI (kg/m²) at baseline. Costs included total, pharmacy, inpatient, and outpatient costs. Utilization included inpatient stays and outpatient records. Repeated measures ANCOVA was used to assess the impact of longitudinal repeated costs over time between groups. Multiple and Poisson regressions were used to analyze total costs and utilization over the entire period. RESULTS: A total of 76,675 veterans were included. There were statistically significant differences in all costs between BMI groups (p < 0.0001). Over the entire time period, compared to normal weight individuals, total adjusted costs were significantly less for overweight and obese individuals (p < 0.0001) but there was no significant difference with severely obese individuals. Average pharmacy and outpatient costs per year for overweight, obese, and severely obese individuals were on higher than normal weight individuals (p < 0.0001). Over the entire time period, adjusted pharmacy costs were $643.61, $1110.03, and $1960.38 higher for overweight, obese, and severely obese individuals, respectively, compared to normal weight individuals (p < 0.0001). However, average inpatient costs and stays per year were higher for normal weight individuals compared to other weight groups (p < 0.0001). CONCLUSIONS: It is not clear why inpatient costs are higher in normal weight individuals compared to other weight groups in the Veterans population. However, obesity has a significant impact on medical and pharmacy cost and utilization and more emphasis should be placed in managing weight gain.

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