OBJECTIVES: Health care utilization and costs may be elevated among patients with C-ONLY and IBS+C. Migraine is an appropriate comparator because it is chronic, costly, and non-gastrointestinal. Health care utilization and costs were evaluated for these three groups. METHODS: A large US health plan claims database was retrospectively analyzed from January 2003 through December 2005. Three mutually exclusive cohorts were identified: 1) C-ONLY: ICD-9 564.0x (N = 91,632); 2) IBS+C: ICD-9 564.1 and 564.0x (N = 10,952); and 3) Migraine: ICD-9 346.xx (N = 101,418). Per patient use and costs (charged amounts) of medical services and prescriptions were assessed over a period of 3 months prior to and 9 months following first diagnosis. Patients had continuous health plan enrollment during this period. RESULTS: Total health care charges were $15,808 and $16,378 for patients with C-ONLY and IBS+C compared to $10,405 among patients with migraine (difference $5403 and $5,973, both P < 0.0001). Inpatient charges were approximately 2.5 times higher for the C-ONLY cohort and 1.7 times higher for the IBS+C cohort compared to migraine ($5112 and $3,625, vs. $2093; both P < 0.0001). Both cohorts had higher charges vs. office visits compared to migraine ($2460 and $3,050, vs. $2282; both P < 0.0001). Charges for hospital outpatient services were $3913 and $4738 for patients with C-ONLY and IBS+C, respectively, compared to $2784 for migraine (both P < 0.0001), while charges for other ancillary services were $2578 and $2627 for C-ONLY and IBS+C, respectively, compared to $1444 for migraine (both P < 0.0001). Prescription drug charges were slightly lower for C-ONLY, but higher for IBS+C compared to migraine ($1438 and $2053 vs. $1551; both P < 0.0001). Charges for ER visits were higher for both cohorts compared to migraine ($307 vs. $251, P < 0.0001 and $284 vs. $251, P = 0.0039). CONCLUSION: C-ONLY and IBS+C are costly conditions that present greater economic burden to payers compared to migraine. Institutional costs are primary drivers for constipation expenditures.

COST OF PATIENT CARE IN PATIENTS WITH CROHN’S DISEASE IN BRAZIL: PUBLIC HEALTH PERSPECTIVE

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OBJECTIVES: Because of its long duration, Crohn’s disease (CD) causes high use of health services and high lifetime costs for medical care. The aim of the present study was to measure the annual costs of patients with CD from the Brazilian public health perspective and to identify potentially relevant determinants of costs. METHODS: Thirty one gastroenterologists from southeast Brazil prospectively evaluated all their CD patients during two months. They used a structured questionnaire specifically developed to evaluate resource use by patients with CD. Costs of medical services (diagnostics and treatment) were considered as well as costs of medication. Resource use was valued using government reimbursement for hospital services and government tender prices for drugs. RESULTS: 221 patients were evaluated. The mean annual cost of one CD patient was R$ 2,239,67, including medication, physician, laboratory, diagnostic procedures, hospitalization and surgery costs. Medication, hospitalization, surgery and laboratory/ diagnostic procedures accounted, respectively for 79%, 18%, 2% and 1% of the total annual costs. Mesalazine was the most used drug to initiate CD’s treatment (59% of the times). Although mesalazine is deemed to be more expensive than sulfasalazine, there was no statistical difference between the costs of the patients treated with mesalazine and sulfasalazine. In fact, due to differences in the mean dosage of theses drugs, mesalazine daily cost is lower than sulfasalazine.

CONCLUSION: This is the first time that CD treatment costs have been demonstrated from the Brazilian public health perspective. Considering that there was no statistical difference in total costs among patients taking mesalazine and sulfasalazine, and that medications represent more than 70% of total CD treatment annual costs in the public Brazilian health care system, the use of mesalazine may represent a reduction factor in the financial resource expenditure for the treatment of CD.

INCORPORATING NON-ADHERENCE RESULTING FROM MULTIPLE DAILY DOSE REGIMENS INTO ECONOMIC MODELS: COST-UTILITY ANALYSIS OF ALTERNATIVE GASTROINTESTINAL PROPHYLAXIS STRATEGIES IN PREVENTING NSAID ASSOCIATED GASTROINTESTINAL COMPLICATIONS IN CANADA

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OBJECTIVES: To investigate the potential impact of non-adherence resulting from multiple daily dosing on cost-utility of gastrointestinal prophylaxis strategies in preventing NSAID associated gastrointestinal complications. METHODS: Two decision analytical models (TreeAge 2005) were developed—one model incorporating non-adherence resulting from multiple daily dosing and another model that does not. Each model evaluates the cost-utility of gastrointestinal prophylaxis in a hypothetical cohort of patients’ age ≥65 years beginning a 6 month course of NSAIDs. Patients entering each model were treated with either: (1.) No Prophylaxis, (2.) Proton Pump Inhibitors (generic omeprazole od) (3.) misoprostol (200 ug qid), (4.) ranitidine (300 mg bid). Average adherence to therapy: od = 79% ± 14%, bid = 69% ± 15% and qid = 51% ± 20% were obtained from a systematic review of studies using electronic monitoring devices. Costs were from the perspective of a 3rd party payer of a Canadian provincial seniors’ drug plan. Cost-Utility was measured in terms of cost per quality adjusted life year (QALY) gained, relative to no prophylaxis. Probabilistic sensitivity analysis using Monte Carlo Simulation was used to generate uncertainty of results, along with cost-effectiveness acceptability curves. RESULTS: Misoprostol (200 ug qid) has a greater likelihood (69.2%) than generic omeprazole (30.8%) of being the optimal cost-effective strategy at a willingness to pay (WTP) of $50,000 per QALY in the model that does not incorporate non-adherence resulting from multiple daily dosing. In the model that incorporates non-adherence resulting from multiple daily dose regimens, generic omeprazole has a greater likelihood (94.8%) than misoprostol (5.2%) of being the optimal cost-effective strategy at a WTP of $50,000 per QALY. CONCLUSION: Cost-utility results are sensitive to non-adherence resulting from multiple daily dosing. Previous economic models in this area have not incorporated this in the analysis. Markov modeling or discrete event simulation may be better suited to incorporate non-adherence rates of therapies.

RELATIONSHIP BETWEEN GASTROESOPHAGEAL REFUX DISEASE SYMPTOMS AND COSTS: A DATABASE STUDY IN A US COHORT

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OBJECTIVES: To describe the relationship between symptoms of gastroesophageal reflux disease (GERD) and costs for work productivity loss, physician/specialist visits, emergency room visits, hospitalizations, and prescribed GERD-related medication.

METHODS: An exploratory database analysis was performed on results from the 2004 National Health and Wellness Survey. US respondents with self-reported symptoms of GERD (n = 10,028, mean age: 52 years, 58% female) were aged and sex-matched to controls without GERD symptoms (n = 10,028). Respondents with GERD were classified by self-reported symptom severity (mild, moderate or severe) and frequency (low or medium-to-high: symptoms on <2 days or ≥2 days per week, respectively). Productivity losses (absence from work and reduced productivity while at work) were obtained using the generic version of the Work Productivity and Activity Impairment questionnaire, and were calculated as the mean difference between employed respondents with GERD (n = 5505) and controls (n = 6031). Costs were calculated by multiplying fixed approximate unit costs by self-reported productivity losses and resource utilisation. RESULTS: Compared with controls, respondents with GERD had greater costs per month for absence from work (mean difference [MD]: $113 per employee), reduced productivity while at work (MD: $283 per employee), physician/specialist visits (MD: $45), emergency room visits (MD: $7), and hospitalisations (MD: $30). Monthly GERD-related medication costs for respondents with GERD were $42. The mean differences in costs increased with increasing GERD symptom severity and/or frequency for all cost variables. The relative cost of GERD medication decreased with increasing symptoms: for example, when excluding productivity costs, GERD medication constituted 40% of the mean difference in overall monthly costs in patients with mild symptoms and a low frequency, but only 25% in patients with severe symptoms and a medium-to-high frequency. CONCLUSION: Increasing severity and frequency of GERD symptoms was found to be associated with higher overall costs, while the relative importance of GERD medication costs decreased.

GASTROINTESTINAL DISORDERS—Health Care Use & Policy Studies

HAVING YOUR CAKE AND EATING IT TOO: RESULTS FROM A POLICY ANALYSIS OF A PROTON PUMP INHIBITOR PREFERRED DRUG LIST

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OBJECTIVES: On May 18, 2005 the Arkansas Medicaid program implemented an evidence-based Preferred Drug List (PDL) recommendation for Proton Pump Inhibitors (PPIs). Under the PDL program guidelines, esomeprazole and lansoprazole were made available as preferred agents to Medicaid recipients without prior approval. Previously, all PPIs required prior authorization and were not covered unless patients The objective of this study was to estimate the impact of this policy on PPI expenditures and utilization as well as utilization of potential substitute H2RAs.

METHODS: This study utilized a time series panel design to evaluate the impact of the policy using Arkansas Medicaid administrative claims data obtained from January 2003 through August 2006. Auto-Regressive Integrated Moving Average (ARIMA) time series models were specified using monthly prescription expenditures and utilization in the pre-policy period (January 2003–April 2005) to forecast expenditures and utilization in the post-policy period. The Medicaid payer perspective was used and all prescription costs were calculated based on the amount paid for each claim adjusted for product specific CMS rebates.

RESULTS: The annual forecast expenditures for PPIs and H2RAs collectively for June 2005–May 2006 was $9,432,605 (95% CI: 7,874,983–10,117,226) and observed expenditures were $4,555,592 indicating that the prior approval policy change was associated with a 52% reduction in GI antisecretionary expenditures or $4,877,013 (95% CI: 4,192,391–5,561,635). Utilization of PPIs increased by 44% (3001 Rxs/month; 95% CI: 3695–2308) which more than offset the 21% (1660 Rxs/month; 95% CI: 1199–2121) decrease in utilization of H2RAs.

CONCLUSION: Replacing step therapy and prior authorization requirements with a preferred drug list selection including supplemental rebates for this Medicaid program significantly lowered expected combined H2RA and PPI prescription expenditures. Since utilization to antisecretory therapy actually increased, increases in non-pharmacy costs or negative outcomes are not anticipated.

PGI13 LOWER DISEASE ACTIVITY AND CLINICAL REMISSION ARE ASSOCIATED WITH REDUCED HOSPITALIZATION RISK IN CROHN’S DISEASE

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OBJECTIVES: Hospitalization is a major source of health care costs for Crohn’s Disease (CD). This retrospective analysis of clinical trial data examined the relationship between Crohn’s Disease Activity Index (CDAI) scores and hospitalization risk.

METHODS: We analyzed data from the CHARM trial (adalimumab maintenance therapy) for 778 randomized patients (of 854 enrolled) with moderate to severe CD (baseline CDAI: 220–450) who were treated for up to 66 weeks. As a measure of clinical efficacy, CDAI scores were collected. Hospitalization events were recorded as severe adverse events. While controlling for patient demographic information, we applied a Cox proportional hazard regression model to evaluate the relationship between hospitalization risk and CDAI reduction or clinical remission (CDAI < 150). CDAI and clinical remission were imputed as time-varying covariates. Simulation was applied to assess 1-year, all-cause and CD-related hospitalization rates.

RESULTS: A total of 157 patients were hospitalized, of which 112 were for CD-related reasons. Cox regression revealed that, at any point in time, lower CDAI score was associated with decreased risk of both all-cause hospitalization (hazard ratio [HR] = 1.06 for every 10 points of CDAI increase, p < 0.01) and CD-related hospitalizations (HR = 1.08, p < 0.01). Simulation study showed that a 70-point CDAI reduction throughout the follow-up period reduced all-cause hospitalization risk by 28.3% and CD-related hospitalization risk by 36.5% at year-end. Clinical remission was associated with a significant reduction in both all-cause (HR = 0.52, p < .001) and CD-related hospitalizations (HR = 0.37, p < .001). Simulations revealed that clinical remission was associated with a 43.7% decrease in the 1-year risk of all-cause hospitalization and a 60.3% decrease in CD-related hospitalization.

CONCLUSION: Both lower CDAI score and clinical remission are associated with significantly reduced hospitalization risk for CD patients.