Abstracts

Between group comparisons (before, after, and change) were all non-significant except for Rx drugs ($19 higher for IBS+C, \( P < 0.05 \)) and other ($8 higher for C, \( P < 0.05 \)) in the after period as well as the change for Rx drugs ($16 higher for IBS+C, \( P < 0.05 \)). Within groups, costs for Rx Drugs significantly increased in both cohorts and outpatient and ED significantly increased for the C cohort. CONCLUSION: Patients with constipation and IBS+C incur similar costs throughout the health care system.

**HEALTH CARE COSTS RELATED TO THE TREATMENT OF CROHN’S DISEASE**

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**OBJECTIVE:** To estimate differences in health care costs between Crohn’s disease (CD) patients and controls and to examine differences in CD costs by prescription therapy.

**METHODS:** Administrative claims data from geographically diverse private US health plans with service dates between January 1, 2002 and December 31, 2005 were utilized. CD patients (ICD-9-CM code 555.x) were identified and matched to controls in a 1:5 ratio on age, gender, health plan, and duration of enrollment. Two part models (logistic regression for likelihood to incur any costs and log-transformed regression for costs) were used to estimate costs (amounts paid by health plans for medical services and pharmaceuticals), controlling for socio-demographic characteristics and medical co-morbidities. CD patients were grouped by drug regimen as follows: steroids, immunosuppressants, infliximab, any combination of the three drug classes, and no regimen or regimens not including the three studied drug classes. Average per patient per day medical and pharmaceutical costs were estimated for each group and projected annually.

**RESULTS:** A total of 9,302 CD patients and 46,510 matched controls were identified. The mean age in each group was 46.9 and 55.8% were females. Annual total predicted costs per patient were over 3 times higher in the CD group ($11,569) than the control group ($3,564, \( P < 0.01 \)). Medical and pharmacy costs were the lowest in the group receiving no regimen/regimens not including studied classes. Medical costs were at least 50% higher in patients receiving combination therapy that included steroids than those receiving combinations not including steroids. CONCLUSION: CD patients incur significantly greater costs than matched controls. CD patients on no regimen/regimens not studied incur few costs suggesting that they may be experiencing remission or mild symptoms. Steroids are associated with significantly higher medical costs, which may be suggestive of uncontrolled symptoms or flares requiring medical resources.

**DIRECT ECONOMIC BURDEN OF CHRONIC HEPATITIS C VIRUS IN A LARGE MANAGED CARE POPULATION**

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**OBJECTIVE:** Hepatitis C virus (HCV) is one of the most common blood-borne infections in the US. The cost burden of HCV to third party payers has not been widely investigated using administrative data. We analyzed retrospective insurance claims to estimate total, all-cause resource utilization and costs among managed care enrollees with chronic HCV compared to similar subjects without HCV. **METHODS:** A large US claims database was analyzed from January 1, 2002 through December 31, 2006. Inclusion criteria were: \( \geq 1 \) diagnosis of chronic HCV (ICD-9 070.44, 070.54, 070.70, or 070.71); no evidence of hepatitis B; \( \geq 12 \) months of continuous plan enrollment post-diagnosis. Per patient use and costs of all medical services and prescription drugs utilized over a 12-month period post-diagnosis were evaluated. Outcomes were also assessed in controls without HCV matched (1:1) on age, gender, and length of plan enrollment. **RESULTS:** A total of 20,662 patients met all inclusion criteria. Mean age was 49 years and 61% were male. Total costs were $20,830 per HCV patient, compared to $4,673 per control (\( P < 0.0001 \)). Hospitalization was seen in 24% of HCV patients compared to 7% of controls (\( P < 0.0001 \)), with mean inpatient costs of $5,765 and $1,031 per patient, respectively (\( P < 0.0001 \)). Patients with HCV had significantly higher (\( P < 0.0001 \)) prescription costs compared to controls ($6,175 vs. $1,097), as well as increased use and costs of other medical services, including office visits (23 vs. 11 visits; $2,112 vs. $1,036), other ancillary services ($4,800 vs. $1,301), emergency care (32% vs. 14% with \( \geq 1 \) admission; $387 vs. $114), and laboratory tests ($741 vs. $110). CONCLUSION: Costs incurred by payers for patients with HCV are more than four times the costs attributable to individuals without HCV. Pharmacy and inpatient services are drivers of these costs. Health plans should be aware of heightened costs for enrollees with HCV when considering formulary access for treatments.

**COST-EFFECTIVENESS OF PROTON PUMP INHIBITORS FOR PATIENTS WITH GASTROESOPHAGEAL REFUX DISEASE:**

**SHOULD EMERGING SAFETY CONCERNS AFFECT THERAPEUTIC DECISION-MAKING?**

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**OBJECTIVE:** Studies have shown that continuous and on-demand use of proton pump inhibitors (PPI) are more efficacious and cost-effective strategies than continuous histamine-2 receptor antagonist (H2RA) use for maintenance therapy of gastroesophageal reflux disease (GERD). Recent research has raised questions about potential safety concerns of hip fractures and acute myocardial infarction (AMI) associated with long-term PPI use. This study integrates treatment efficacy with emerging safety data to compare the cost-effectiveness from the payer perspective of continuous PPI use, on-demand PPI use, and continuous H2RA use for maintenance therapy for GERD. **METHODS:** A Markov model was designed to simulate, over five years, the clinical and economic outcomes of GERD patients asymptomatic after initial acute treatment on maintenance therapy with PPIs or H2RA. The transition probabilities, costs, and utilities were derived from the peer-reviewed literature. Sensitivity analysis was conducted to examine the robustness of the model and to determine the thresholds at which safety issues may alter therapeutic decisions. **RESULTS:** In the base-case efficacy model, intermittent PPI treatment was the least costly and least effective strategy, whereas the step-down PPI strategy was most costly and most effective, with an incremental cost-effectiveness ratio (ICER) of $24,636 per quality-adjusted life-year (QALY), relative to the intermittent PPI strategy. The maintenance H2RA strategy was dominated throughout the sensitivity analysis. The results were consistent when hip fracture events were introduced into the model, with the step-down PPI strategy ICER increasing to $29,113/QALY. Threshold analysis for AMI showed the hypothesized relative risk (RR) would need to be 11.9 before maintenance H2RA therapy would be considered a cost-effective strategy.
alternative. CONCLUSION: Under all circumstances, strategies using PPIs are optimal for managing patients with GERD. Emerging concerns around hip fracture and AMI do not significantly affect the relative cost-effectiveness performance of alternative treatment strategies.

PGI15

ECONOMIC EVALUATION OF PROTON PUMP INHIBITORS, RELATIVE TO ALTERNATIVE GASTROINTESTINAL PROPHYLAXIS AGENTS, FOR PREVENTION OF GI COMPLICATIONS IN ELDERLY PATIENTS TAKING NON-SELECTIVE NON-STEROIDAL ANTI-INFLAMMATORY DRUGS (NSNSAIDS)

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OBJECTIVE: To determine the cost-utility of PPIs, compared to alternative gastrointestinal prophylaxis in the prevention of GI complications among elderly patients (age ≥ 65) taking nsNSAIDs. METHODS: A cost-utility analysis, from a third-party payer perspective, was conducted using a decision-analytical model over a one year time horizon. We compared: nsNSAID alone, nsNSAID + PPI (omeprazole, 20 mg od), nsNSAID + ranitidine (150 mg bid), nsNSAID + ranitidine (300 mg bid), misoprostol (200 mg bid), and misoprostol (200 µg qid). Clinical inputs (including ulcer risk, bleeding complications, dyspepsia symptoms), costs, and utilities were derived from recently published studies. Probabilistic and deterministic sensitivity analyses were performed to test the robustness of the results. RESULTS: In elderly patients aged ≥65 y, the incremental cost-utility ratio (ICUR) of PPIs, relative to nsNSAID alone, was $320,743 per Quality-adjusted life year (QALY) gained. Other treatment alternatives (ranitidine and misoprostol) were dominated. The ICUR of PPI, relative to nsNSAID alone, was $207,604 per QALY gained in patients aged >75 y. In patients taking concomitant low-dose aspirin, ICURs for PPI therapy were $190,943 and $117,944 per QALY gained in patients aged ≥65 y and aged ≥75 y, respectively. In patients aged ≥65 y with a history of a complicated or uncomplicated ulcer, ICURs of $25,662 and $45,688 were observed, respectively. CONCLUSION: Routine prescription of PPIs in all elderly patients (age ≥65) taking nsNSAIDs may not be warranted in a health care system with finite resources, as ICURs exceed commonly cited thresholds in the range $50,000-$100,000 per QALY gained. However, co-prescribing PPIs among all elderly patients (age ≥65 y) taking nsNSAIDs and with a history of a complicated or uncomplicated ulcer may be considered good value for money, as ICURs are less than $50,000 per QALY gained.

GASTROINTESTINAL DISORDERS—Patient-Reported Outcomes

PGI16

DISPARITIES IN MEDICATION UTILIZATION AND COMPLIANCE FOR GASTRO-ESOPHAGEAL REFLUX DISEASE: A POPULATION-BASED STUDY

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OBJECTIVE: Examine medication utilization for gastro-esophageal reflux disease (GERD) in a community-based setting. Assess disparities in types of medications used and frequency of use related to severity of symptoms, race, education, employment, and income. METHODS: A questionnaire based upon previous work (Srinivansin, J Clin Gastro) was developed to assess self-reported GERD prevalence and medication utilization and was translated into Chinese and Spanish. We worked with community and faith-based leaders to identify events for data collection. GERD prevalence and medication usage in four ethnic groups (White, Black, Asian, Hispanic) were compared, controlling for age, gender and other demographic variables. Descriptive and multivariate analyses were done using SAS 9.1. RESULTS: Of the 34.6% (307/1172) of respondents reporting at least weekly heartburn, 60.6% took over-the-counter medication, 56.4% took prescription (Rx) medication and 12.7% took no medications. Whites had a significantly higher rate of OTC utilization at 68.8%, followed by Hispanics, Blacks, and Asians at 61.1%, 60.2%, and 35.5%, respectively (P = 0.0127). Whites were the lowest users of Rx medications compared to the other ethnicities. For those taking prescription Proton Pump Inhibitors (PPIs), (N = 131) 51.7% took 5 to 7 times per week. Participants with at least weekly and daily heartburn were more likely to take PPIs 5–7 times per week (P = 0.0098 and P = 0.0056, respectively). Subjects with a diagnosis of GERD by a physician were more likely to take their prescription PPIs 5 to 7 times per week compared to those claiming no diagnosis, 60% v. 37.3%, respectively (P = 0.0111). CONCLUSION: We found significant variation in the use of OTC and RX medications for GERD by ethnicity. Only half of patients taking prescription PPIs took them 5–7 times per week. Future research should focus on improving communication of GERD diagnosis to patients and recommended use of prescription PPIs in the absence of a diagnosis for GERD.