The disease burden of irritable bowel syndrome in Korea

Kim Y1, Jung B2, Park S1, Park J1, Nam M1, Jung HK1, Choi MG1

1National Evidence-based health care Collaborating Agency, Seoul, South Korea, 2Ewha Womans University School of Medicine, Seoul, South Korea, 3College of Medicine, The Catholic University of Korea, Seoul, South Korea

OBJECTIVES: The aim of this study was to estimate the annual societal disease burden of irritable bowel syndrome (IBS) in Korea for the year of 2008. METHODS: The claim data with IBS were extracted from the Health Insurance Review & Assessment Service database in 2008 of Korea. After definition of patient with specialists, the prevalence and medical costs were calculated. The number of outpatient visits and length of hospital stay also were calculated to estimate transportation cost and productivity loss. RESULTS: The annual national patients with IBS were estimated to be 1.30 million with 753,688 (57.79%) for female. The results showed that the crude prevalence of IBS was 2.68% (95% CI: 2.66%-2.71%), 2.25% for male and 3.12% for female in 2008. The total cost due to IBS was 14.9 billion won (1$ = 1.30 million with 753,688 (57.79%) for female. The results showed that the disease burden of IBS appears to be high because of the high morbidty although not a significant cause of death. The result is likely to underestimate due to using claim data and strict definition of patient. However, this data might be useful and necessary to support evidence based decision making for IBS.

Direct and indirect costs of hepatitis C virus (HCV): comparison of non-HCV, untreated HCV, and Peg-RAV

Bourbeau M1, Pan K1, Wilson K1, Solomon M2, Spiegel B3, Beam C4, Chakravarti P5

1University of Miami Leonard Miller School of Medicine, Miami, FL, USA, 2Takeda Pharmaceuticals America, Deerfield, IL, USA, 3University of Miami Humana Health Services Research Center, Miami, FL, USA, 4Navigens Inc, Foster City, CA, USA

OBJECTIVES: Assess patterns of utilization and costs between HCV patients on pegylated interferon with ribavirin (PEG-RAV), untreated HCV, and non-HCV controls. METHODS: We identified three cohorts using the MarketScan Commercial Claims and Encounters Database® from 2002–2007: HCV patients on PEG-RAV, untreated HCV, and non-HCV controls. We used propensity scores to match treated controls, and the functional dyspepsia

MEDICAL SERVICE UTILIZATION AND COSTS BY DISEASE SEVERITY, SUSTAINED VIRAL RESPONSE, AND GENOTYPE IN EUROPEAN PATIENTS WITH CHRONIC HEPATITIS C VIRUS

Flouris KA1, Mitra D1, Lazzarin C1, Bapat B1, Navarro J1

1RTI Health Solutions, Research Triangle Park, NC, USA, 2Novartis Pharma AG, Basel, Switzerland

OBJECTIVES: To document variations in resource utilization and costs by disease severity, sustained viral response (SVR), and genotype in a European population with chronic hepatitis C virus (C-HCV). METHODS: Patients chart from the UK, France, Germany, Spain, and Italy were retrospectively reviewed. Inclusion criteria were: C-HCV diagnosis within past 5 years; age ≥ 18 years; no diagnoses of hepatitis B or HIV; no clinical trial participation; no clinical trial interventions; no therapy (2006 and utilization costs ($9,000) for hospitalizations, emergency room (ER) and office visits, and specialty referrals were aggregated within patients over 1 year post-diagnosis. C-HCV severity was assessed via Metavir score. Among patients receiving C-HCV-directed pharmacotherapy, SVR was defined by viral RNA < 10 IU/mL at 12 months post-treatment. Utilization and cost differences across clinical factors were assessed with multivariate modeling. RESULTS: In total, 1016 patients were identified. Overall, 23% of severe patients were hospitalized versus 2.5% of mild. Hospitalization was 5 times more likely in severe C-HCV compared to mild (odds ratio (OR) = 5.39; P = 0.008), while the hospitalization rate, measured by Possion incidence rate ratio (IRR), was 4 times higher (IRR = 3.98; P = 0.010). Hospital costs were $1380 higher in severe versus mild disease (P = 0.001). Hospitalization risk in SVR attainters was less than half of that of non-attainers (OR = 0.22; P < 0.0001); an ER, office, and specialist visit rates were significantly lower among SVR attainers. Genotype had little effect on utilization, but genotype 1 was associated with slightly lower (690 per patient; P < 0.0001) hospital costs versus genotypes 2b.

CONCLUSIONS: Disease severity and SVR are important predictors of C-HCV costs. Awareness of these factors may help to lower the health burden of C-HCV, may help to promote strategies for earlier disease detection and increased treatment initiation before progression occurs, as well as formulary access for more convenient therapies that increase treatment persistence and thereby SVR rates.

Patterns of lubiprostone utilization and costs in members of a large health benefits company

Susantitisakul T1, Tanawirun T1, Gruenewald ML2, Huffman JW3

1University of Miami Leonard Miller School of Medicine, Miami, FL, USA, 2Takeda Pharmaceuticals America, Deerfield, IL, USA, 3University of Miami Humana Health Services Research Center, Miami, FL, USA, 4Navigens Inc, Foster City, CA, USA

OBJECTIVES: Assess patterns of utilization and costs of twice daily 24 mcg dosing of lubiprostone in a large managed care population. METHODS: Patients included Humana members 18 years and older with medical claims for chronic constipation (CC) and/or irritable bowel syndrome (IBS) between April 1, 2006 and April 30, 2008. The index date was the first diagnosis of CC or IBS. Patients had at least 180 days of continuous enrollment pre-index and at least 30 days post-index. Users and non-users were compared. Users were pre- and post-lubiprostone initiation. RESULTS: A total of 92,804 patients with a diagnosis of CC or IBS were identified during the study period; 1873 filled at least one 30-day prescription for lubiprostone. Seventy-five percent of users were female. Lubiprostone users were younger than non-users (61.6 vs. 66.2 yrs old) and more likely to be co-prescribed opioids (35.5 vs. 29.4%), antihistamines (14.8 vs. 9.5%) and tricyclic antidepressants (8.1 vs. 4.7%), all statistically significant. Common co-medications in lubiprostone users were back problems (23.6%) and abdominal pain (21.9%). A total of 1605 users had both 6-months pre- and post-lubiprostone initiation data. A total of 42.2% of these patients filled more than one 30-day lubiprostone prescription; 6.42% filled 6 or more. Usage of other prescription laxatives decreased by 4.6% (p < 0.05) subsequent to lubiprostone initiation. Monthly health care costs per utilizing member increased by $67.10 (p < 0.0001). Pharmacy costs rose by $71.73 (p < 0.0001) and ER costs decreased by $8.12 (p < 0.05). Pre-post changes in outpatient and inpatient costs were not significant. Monthly inpatient and ER visits for these 1605 members decreased by $3,942 vs. $9,543 (p < 0.001) and ER costs ($366 vs. $505; p < 0.001), but lower inpatient costs ($429, inpatient pharmacy costs = $9,342, outpatient physician visit costs = $7,654. After adjusting for demographic and clinical characteristics, including HIV and cirrhosis, differences remained significant but diminished. CONCLUSIONS: HCV patients engender a higher economic burden compared to non-HCV controls. Treated patients cost more than untreated patients; the cost differential is primarily driven by high outpatient pharmacy costs. Indirect cost differences are driven by greater absenteeism duration and greater short term disability use and duration. These data provide insights into the economic burden of HCV and its treatment, of which can be employed in future health economic analyses evaluating existing and emerging therapies.

Cost-effectiveness analysis of treatment with peginterferon-alfa-2a versus peginterferon-alfa-2b for patients with genotypes 2/3 chronic hepatitis C under the public payer perspective in Brazil

Barros FMR1, Cinqueir HP2, Bareses LG3, Santos E4

1Hospital Portugues de Beneficencia e Reformatorio e Hospital das Clinicas - UFPE, Recife, Pernambuco, Brazil, 2Hospital das Clinicas da Universidade Federal do Grande do Sul, Porto Alegre, Brazil, 3Roches Brazil, Sao Paulo, Brazil

Hepatitis C affects approximately 110 million people worldwide and is one of the main causes of chronic liver disease. HCV infection progresses to chronicity in approximately 30% of infected individuals, from whom up to 20% will developed cirrhosis over 20 years, thus presenting high risk of complications related to hepatic insufficiency and hepatocellular carcinoma. OBJECTIVES: To compare treatment costs and outcomes of peginterferon-alfa-2a versus peginterferon-alfa-2b, both associated...
with ribavirin, in the therapeutic scheme of 24 weeks for hepatitis C in Brazilian private payer perspective in Brazil.

**ECONOMIC ANALYSIS OF ALVIMOPAN FOR PREVENTION AND MANAGEMENT OF POST-OPERATIVE ILEUS**

**OBJECTIVES:** Whether the use of alvimopan is cost-effective, compared to the standard post-operative care, for post-operative ileus (POI) among patients undergoing small- or large-bowel resection via laparotomy. METHODS: We constructed a formal decision model from the health economic perspective. The clinical outcomes (time to discharge order written [DCO], post-operative nasogastric tube insertion, POI-related readmission within 7 days, nausea and vomiting) were obtained from meta-analyses of published studies. Cost inputs included costs associated with the drugs, nursing labor, readmission, and hospitalization. Cost-consequences was assessed by determining the net cost of alvimopan use and subsequent reduction in length of stay (LOS). Sensitivity analyses were conducted. RESULTS: The alvimopan drug cost was $570 based on an average of 9.5 doses. Given the 18.4-hour mean reduction in DCO, the use of alvimopan reduced hospitalization costs by $2021. In the base-case, alvimopan resulted in a $1187 per-person cost savings. In sensitivity analyses, the result was robust to changes in key parameters including the cost and number of doses of alvimopan, DCO, readmission rates, and hospitalization cost. In scenario analyses, alvimopan use yielded a cost saving of $997 with no difference in DCO was assumed. However, when no difference in DCO was assumed, the total cost of care with alvimopan was $278 greater. Similarly, it was $569 greater when both readmission rates and DCO were assumed to be equal between strategies. In Monte Carlo simulation, the mean difference in overall cost of care was $1259 (95% certainty interval: $398 to $6306), favoring the use of alvimopan. CONCLUSIONS: The overall hospitalization cost reduction associated with the use of alvimopan offsets the drug cost. Alvimopan appears to be cost-saving for POI among patients undergoing bowel resection via laparotomy. This finding is not applicable to the less-invasive laparoscopic surgical approach which has been associated with decreased post-operative morbidity and LOS.

**EVALUATION OF COST-EFFECTIVENESS OF CHRONIC HEPATITIS B TREATMENTS: ENTECAVIR AND TELBIVUDINE**

**OBJECTIVES:** The aim of this study was to evaluate the cost-effectiveness of entecavir and telbivudine in HBeAg-positive/negative chronic hepatitis B (CHB) patients based on the ability of each drug to suppress viral replication. METHODS: A cost-effectiveness analysis was performed to evaluate the impact of treatment on disease morbidity and costs over the lifetime and the short term (10 years) for a patient based on a societal perspective. A decision tree was developed to assess the drug abilities to suppress HBV DNA replication. To obtain probability estimates with HBV DNA levels and resistance rates of entecavir and telbivudine, recent entecavir-lamivudine BHoH studies and telbivudine-lamivudine GLOBE studies were independently compared. The risks of progression to compensated cirrhosis (CC), decompensated cirrhosis (DC), or HCC were derived from the REVEAL-HBV study, which was to evaluate the relationship between hepatitis B viremia and progression to cirrhosis and HCC. For the life expectancy of DC and HCC, the declining exponential approximation of life (DEALE) method was applied based on the published annual mortality rates of DC and HCC. Both direct and indirect medical costs were included and univariate sensitivity analyses were performed on parameters in the model to evaluate the impact of parameter uncertainty.RESULTS: A per-person basis, the ICERs of entecavir compared to telbivudine for lifetime therapy were $13,649 and $52,776 in HBeAg-positive and HBeAg-negative CHB, respectively. In the 10-year model, the ICERs were $39,089 and $365,100 in HBeAg-positive and HBeAg-negative CHB, respectively. One-way sensitivity analyses showed that the model was robust to most parameters such as drug costs, discount rate and average time to events from study entry were sensitive. CONCLUSIONS: For lifetime therapy and for HBeAg-positive patients, entecavir was cost-effective compared to telbivudine. However, in the short-term treatment model for HBeAg-negative CHB, entecavir was not cost-effective.

**ECONOMIC ANALYSIS OF PEGINTERFERON-ALFA-2A VERSUS PEGINTERFERON-ALFA-2B FOR COST-EFFECTIVENESS ANALYSIS OF TREATMENT WITH ALFA-2A IS MORE EFFECTIVE AND LESS COSTLY WHEN COMPARED TO ALFA-2B UNDER SUS PERSPECTIVE IN BRAZIL.**

**METHODS:** A72 Abstracts