

on therapy used more health care resources and were more costly during the 12-month observation period.

PGI24

BURDEN OF GASTROESOPHAGEAL REFLUX DISEASE AMONG PATIENTS WITH PERSISTENT SYMPTOMS DESPITE PROTON PUMP INHIBITOR THERAPY: AN OBSERVATIONAL STUDY IN FRANCE

Bruley des Varannes S¹, Granstedt H², Karlsson M², Wahlgqvist P², Ruth M², Furstnau M³, Despiégl N³, Ståhlhammar NO²

¹University of Nantes, Nantes, France, ²AstraZeneca R&D, Mölndal, Sweden, ³OptumInsight, Nanterre, France

OBJECTIVES: Proton pump inhibitors (PPIs) are the treatment of choice for gastroesophageal reflux disease (GERD), yet many patients experience persistent symptoms. To date, the burden of illness (BoI) among partial responders to PPI treatment is not well understood. **METHODS:** REMAIN-France was a multicentre, 12-month prospective study of adults with GERD who were newly identified as partial responders to optimised PPI treatment. BoI was evaluated at baseline, 3, 6, 9 and 12 months via patient-completed questionnaires, including the Reflux Symptom Questionnaire with 7-day recall (RESQ-7). Medical evaluations were completed at baseline, 6 and 12 months. Healthcare consumption was evaluated in terms of visits to a primary care physician (PCP) and gastroenterologist, number of endoscopies and days on prescribed GERD medication. All analyses were descriptive. **RESULTS:** A total of 262 patients were enrolled (mean age, 54y; 40.5% men), the majority of whom (n=226, 86%) completed the 12-month study. Using the RESQ-7 questionnaire, 32% of patients reported severe symptoms and 48% reported daily symptoms at baseline despite PPI treatment. Whilst continuing to receive prescribed GERD medication (most commonly daily PPIs), symptoms remained burdensome at 6 and 12 months and indicated a positive relationship with impaired quality of life (SF-36, EQ-5D) and decreased work productivity (WPAI-GERD). Between baseline and 6 months, the mean number of visits to a PCP and gastroenterologist among all patients was 1.9 and 0.5, respectively. For 7-12 months' follow up the corresponding figures were 1.8 and 0.4, respectively. A total of 12 patients (4.6%) underwent endoscopy in the first 6 months of follow-up; thereafter, 10 patients (3.9%) underwent endoscopy between 7 and 12 months. **CONCLUSIONS:** In French patients with GERD who have persistent symptoms despite PPI therapy, the symptom burden is substantial and a positive relationship with impaired quality of life and decreased work productivity is indicated. Supported by AstraZeneca R&D, Mölndal, Sweden.

PGI25

CHRONIC HEPATITIS C (CHC) RELATED FLU-LIKE SYMPTOMS; DEVELOPMENT OF A PATIENT REPORT OUTCOME (PRO) MEASURE AND RESULTS FROM PILOT EFFICACY STUDIES

Mathias SD¹, Crosby R¹, Bayliss MS², Hillson J³, Horga MA⁴, L'Italien C⁵, Sapra S⁶

¹Health Outcomes Solutions, Winter Park, FL, USA, ²QualityMetric Incorporated, Lincoln, RI, USA, ³Zymogenetics/BMS, Seattle, WA, USA, ⁴Bristol-Myers Squibb, Wallingford Center, CT, USA, ⁵Bristol-Myers Squibb and Yale University School of Medicine, Wallingford, CT, USA, ⁶Bristol-Myers Squibb, Princeton, NJ, USA

OBJECTIVES: Flu-like symptoms (pyrexia, chills, myalgia and arthralgia) are experienced by 30%-50% of chronic hepatitis C (CHC) patients undergoing combination interferon and ribavirin (RBV) treatment and are often cited as reasons for discontinuation. To track these symptoms, the Hepatitis Physical Symptom Severity Diary (HPSS-D), was developed. **METHODS:** Four items from the HPSS-D comprise the Flu-Like Symptom Index (Index): fever, chills, muscle aches/pain, and joint pain. Response options ranged from 0 (no symptoms) to 10 (worst symptom/problem) over the past 24 hours. The diary was completed for 7 consecutive days at baseline and weeks 4, 8 and 12. Data from two Phase 2b studies of treatment-naïve patients comparing pegIFNalpha2a/RBV (peg-alfa) to peg-IFN Lambda/RBV (peg-lambda) and peg-alfa to peg-alfa and direct acting antiviral were combined. Measurement properties were assessed. Mean and change scores and proportions of patients reporting flu-like symptoms were calculated. **RESULTS:** Measurement properties of the Index were supported with test-retest ICC value of 0.85, Cronbach's alpha range: 0.73-0.81, low to moderate construct validity [range: 0.23-0.63], and demonstrated known groups validity (based on physician-reported flu symptoms). Responsiveness coefficients suggested a small to medium effect (SES=0.40; SRM=0.39). MID's were 2.5-3.0 points. Mean Index scores at week 12 for the peg-alfa group (N=36) increased from baseline by 2.39 ± 4.95 versus 0.83 ± 5.05 for peg-lambda patients (N=26). The percentage reporting any flu-like symptoms was significantly higher for peg-alfa (75%) versus peg-lambda patients (27%) at week 12, (p<0.001), despite similar baseline rates. Fewer peg-lambda versus peg-alfa patients (50% versus 82%) experienced clinically significant worsening of flu-like symptoms. **CONCLUSIONS:** PRO measures are important parameters to gauge patients' experience with treatment, providing systematic assessment of treatment benefit and side effects. This new Flu-Like Symptom Index from the HPSS-D demonstrated adequate measurement properties and detected lower intensity and frequency of flu-like symptoms for peg-lambda versus peg-alfa patients.

PGI26

EVALUATING THE IMPACT OF GASTROINTESTINAL EPISODES ON THE HEALTH-RELATED QUALITY OF LIFE OF SOLID ORGAN TRANSPLANT RECIPIENTS: VALIDATION OF THE SIGIT-QOL® QUESTIONNAIRE – THE MYPACIENTE 1 & 2 STUDIES

Balaña M¹, Lahoz R¹, Ortega F², Puig JM³, Paul-Ramos F⁴, Guinea C¹

¹Novartis Farmacéutica, S.A., Barcelona, Spain, ²Hospital Universitario Central de Asturias, Oviedo, Spain, ³Hospital Del Mar, Barcelona, Spain, ⁴Hospital Miguel Servet, Zaragoza, Spain

OBJECTIVES: To develop and validate a clinically useful instrument for assessing the impact of gastrointestinal symptoms (GI) on the health-related quality of life

(HRQoL) of solid organ transplant (SOT) patients (kidney, liver, heart or lung). **METHODS:** Two phases: the Mypaciente-1 study was an epidemiological, cross-sectional, multicentre study in which the SIGIT-QoL® questionnaire (17 items) was developed and its reliability, feasibility and validity (content and construct) were proven. At second, an observational, prospective, multicentre study, the Mypaciente-2, was implemented to assess the test-retest reliability and the sensitivity to change of the SIGIT-QoL®. SOT patients aged ≥18, who had received the graft 3-24 months before and suffering from GI, were evaluate at baseline, 1-2 weeks and 3 months after baseline. Data recorded: age, sex, SOT type, acute allograft rejection (AAR), GI etiology, Clinical and Patient global Impression scale (CGI-SI&GI and PGI-SI&GI) and the SIGIT-QoL® (range: 0-maximum impact to 68-minimum disruption). Intraclass correlation (ICC), differences between baseline and last visit (Wilcoxon test), effect size (Cohen's d), the minimal important difference –MID- (using CGI & PGI as anchors in General Linear Models) and the cut-off score (ROC analysis) were calculated. **RESULTS:** In the Mypaciente-2 study 277 SOT patients (61.4% males) were included. Mean age (SD) was 52.69(11.65) years, time since transplantation was 12.31(6.74) months and 22.4% suffered AAR. At baseline, SIGIT-QoL® scores: 51.21(11.25) showed an impact on patients' HRQoL that diminished 3 months later: 57.40(8.38;p<0.001). SIGIT-QoL® test-retest reliability was adequate (ICC=0.740-0.895). A high-moderate effect size (d=0.590) was found. Moreover, MID of 4.2 points in total scores were found (F4,223=16.917,p<0.001 and F4,224=25.138,p<0.001). Finally, a cut-off point (55.00 points) was estimated (AUC=0.846,p<0.001; sensitivity=0.793; specificity=0.713; negative likelihood ratio=0.290; positive likelihood ratio=2.762). **CONCLUSIONS:** The SIGIT-QoL® is a feasible (average completion time lower than 6.5 minutes), reliable and valid instrument for assessing the impact of GI symptoms on SOT patients.

PGI27

SLEEP DISTURBANCE AND QUALITY OF LIFE AMONG HEPATITIS C INFECTED INDIVIDUALS

Wagner JS, Gross HJ, DiBonaventura MD
Kantar Health, New York, NY, USA

OBJECTIVES: Hepatitis C virus (HCV) infection is associated with fatigue, anxiety, and depression. Little is known, however, about the effect of sleep disturbances on health-related quality of life (HRQoL), and what factors are associated with such disturbances. **METHODS:** This study is based on data from the EU National Health and Wellness Survey (N=57,805), a cross-sectional database representative of the adult EU population. Patients who reported being diagnosed with HCV by a physician and provided household income and body weight information were included for analysis (N=301). Patients who reported experiencing insomnia or sleep difficulty symptoms in the past year (n=135) were compared with patients who did not experience such symptoms (n=166). Sleep group membership was predicted with a logistic regression model, while mental and physical HRQoL (SF-12) were predicted with multiple regression models. Covariates included age, gender, marital status, education, income, employment, BMI, exercise and smoking habits, alcohol use, and physician diagnosed HIV/AIDS, hepatitis B, anxiety disorder, and depression. **RESULTS:** HCV patients with sleep disturbances were significantly younger (48.8 vs. 51.7) and more likely to be diagnosed with HIV/AIDS (8.1% vs. 2.4%), an anxiety disorder (56.3% vs. 22.9%), and depression (48.9% vs. 10.8%) (ps<0.05) than patients with no sleep disturbances. After controlling for potential confounders, anxiety disorder (OR=2.2) and depression (OR=5.1) were the only significant predictors of sleep disturbances (ps<0.05). SF-12 mental HRQoL scores were significantly associated with age (b=0.2), anxiety disorder (b= -5.7), depression (b= -5.9), and sleep disturbances (b= -5.1, ps<0.05). SF-12 physical HRQoL scores, however, were not associated with sleep disturbance. **CONCLUSIONS:** Despite the strong association of anxiety disorder and depression with sleep disturbances among HCV-infected individuals, sleep disturbances had an independent and significant effect on mental HRQoL in this population. The results suggest effective treatment of disturbed sleep may improve the quality of life of HCV patients.

PGI28

DISEASE-SPECIFIC HEALTH-RELATED QUALITY OF LIFE IN PATIENTS WITH QUIESCENT ULCERATIVE COLITIS: EFFECTS OF ONE YEAR MAINTENANCE TREATMENT WITH MMX MESALAMINE

Solomon D¹, Yarlas A², Yen L³, Hodgkins P³, Karlstadt R¹, Kane SV⁴

¹Shire Pharmaceuticals, Wayne, PA, USA, ²QualityMetric Incorporated, Lincoln, RI, USA, ³Shire Development, Inc., Wayne, PA, USA, ⁴Mayo Clinic, Rochester, MN, USA

OBJECTIVES: Active ulcerative colitis (UC) negatively impacts patients' health-related quality of life (HRQoL); thus a fundamental goal of treatment is to achieve and maintain disease remission. The current analysis examines how long-term maintenance treatment with a multi-matrix (MMX) oral formulation of mesalamine impacted disease-specific HRQoL in patients with quiescent UC. **METHODS:** This analysis examined the 12-month maintenance phase of a two-phase, multicenter, open-label study, during which patients with quiescent UC at baseline received MMX mesalamine 2.4 g/day QD. Disease-specific HRQoL was measured at baseline, six-month, and twelve-month (endpoint) visits using the Shortened Inflammatory Bowel Disease Questionnaire (SIBDQ), which measures 4 domains: bowel symptoms, systemic symptoms, emotional function and social function. Changes in SIBDQ domains and total score over time were assessed using repeated-measures analysis of variance. Correspondence between disease-specific HRQoL and disease activity was assessed using analysis of covariance to compare SIBDQ scores at month 12 between clinically recurrent and non-recurrent patients while controlling for age, gender, and BMI. **RESULTS:** Data were collected from 203, 144, and 157 patients at baseline, 6-month, and 12-month/early withdrawal visits, respectively.

For the overall patient sample, no statistically significant changes across visits was observed for any SIBDQ domain or total score (all $P > 0.05$); mean change from baseline to endpoint did not exceed 3% for any SIBDQ score. At endpoint, patients exhibiting recurrent UC ($n=29$) scored significantly lower than non-recurrent patients ($n=117$) on bowel symptoms, emotional function, and social function domains and total score ($P < 0.001$ for all differences). **CONCLUSIONS:** Patients with quiescent UC receiving daily treatment with MMX mesalamine (2.4 g/day) exhibited high stability, and thus strong maintenance, in disease-specific HRQoL over the course of one year. The majority of patients remained in clinical remission following one year of this treatment regimen. Patients with clinically recurrent UC showed significantly worse HRQoL outcomes than non-recurrent patients.

PGI29

QUALITY OF LIFE IN CHRONIC LIVER DISEASE

Anapaz V¹, Vicente C², Almeida A¹¹Universidade da Beira Interior, Covilhã, Portugal, ²Centro Hospitalar Cova da Beira, Covilhã, Portugal

OBJECTIVES: Chronic liver disease is responsible for approximately 40,000 deaths annually, which corresponds to about 2% of all deaths worldwide. This study aimed to specify and understand the characteristics of patients with LC service followed in the Gastroenterology at CHCB as well as assess the severity of LC using the scale of Child-Pugh-Turcotte and the Health Related Quality Of Life. **METHODS:** This is a retrospective, observational and cross for the evaluation of QdVS a group of patients diagnosed with LC in CHCB. Direct interviews were carried out using questionnaires to a sample of 42 patients with clinical and imaging during the months of January and April 2011. Besides the descriptive analysis we tried to establish some correlations between the variables studied, considered statistically significant when p value is < 0.05 . **RESULTS:** The mean age of study participants was 62 years, and approximately 31% of patients were between 66 and 75 years. The males and ethylic etiology of cirrhosis accounted for a proportion of over 90% of all patients. The average score obtained after applying the SF-36 was around 49%. After the calculation made to stratify the severity of the disease across the range of CPT, 69% of patients were in class A, class B 21% and 10% to class C. **CONCLUSIONS:** The LC mainly affects males, and regular alcohol consumption the predominant etiology. Regarding the scale of CPT, the results indicate a good survival. We conclude that the QdVS is clearly affected in CLD associated with LC, particularly in terms of physical pain, physical performance and vitality. This study is consistent with national data, where the Liver Cirrhosis is a public health problem, for which measures must be taken concerning the excessive consumption of alcoholic beverages.

PGI30

COMPARISON OF HEALTH RELATED QUALITY OF LIFE BETWEEN HEPATITIS, CIRRHOSIS, LIVER TRANSPLANTATION AND HEPATIC CARCINOMA: RESULTS OF THE COME STUDY

Ciampichini R

Charta Foundation, Milano, Italy

OBJECTIVES: As a result of successful treatments for chronic hepatic diseases (CHDs), patients generally live longer but often with a compromised wellbeing. We assessed Health-Related Quality-of-Life (HRQoL) of CHDs adult patients. **METHODS:** A naturalistic multicentre Cost-of-Illness study was conducted. Adult patients (age > 18 years) diagnosed with CHDs, consequently accessing at gastroenterology unit of 2 hospitals, were enrolled. Direct, indirect and intangible costs were estimated from the societal perspective. The patients were sub-grouped according to their main condition at the enrollment: hepatitis B and/or C, cirrhosis, liver transplantation, hepatic carcinoma. HRQoL was assessed with the EQ-5D 3L and 5L versions (the psychometric properties of the 5L new version was previously discussed: podium by Scalone et al, 13th ISPOR Congress 2011, Prague). The following results pertain the EQ-5D-5L results. **RESULTS:** We enrolled 1,088 valid patients, 62% male, aged 19-90 (median=60) years. Patients with hepatitis were 60.4%, 20.2% had cirrhosis, 11.9% had liver transplantation, 7.5% hepatic carcinoma. Among all the patients, the mean \pm SD VAS was 69.1 \pm 20.8. Mobility was an extreme/severe problem for 3.3% and a moderate/slight problem for 22.6% of the patients. Self-care was an extreme/severe problem for 1.2% and a moderate/slight problem for 11.5% of the patients. Usual activities was an extreme/severe problem for 4.0% and a moderate/slight problem for 25.5% of the patients. Pain/discomfort was extreme/severe for 3.2% and a moderate/slight problem for 36.1% of the patients. Anxiety/Depression was extreme/severe for 4.5% and a moderate/slight for 43.5% of the patients. Patients with cirrhosis reported the worst levels of HRQoL, those with carcinoma had a worse HRQoL than patients with transplantation, those with hepatitis reported better levels of HRQoL. **CONCLUSIONS:** Our study shows how HRQoL is negatively related with the severity and chronicity of CHDs. Health technology aimed to improve wellbeing in patients with disabling long term hepatic disease is required.

PGI31

THE MAINTENANCE OF WORK-RELATED PRODUCTIVITY DURING ONE YEAR OF MMX MESALAMINE TREATMENT FOR PATIENTS WITH QUIESCENT ULCERATIVE COLITIS

Yen L¹, Yarlas A², Hodgkins P¹, Solomon D³, Karlstadt R³, Kane SV⁴¹Shire Development, Inc., Wayne, PA, USA, ²QualityMetric Incorporated, Lincoln, RI, USA, ³Shire Pharmaceuticals, Wayne, PA, USA, ⁴Mayo Clinic, Rochester, MN, USA

OBJECTIVES: Ulcerative colitis (UC) impairs patients' productivity in the workplace. While studies have shown increased productivity in patients with active UC following treatment with a multi-matrix (MMX) oral formulation of mesalamine, the current analysis is the first to examine maintenance of work-related outcomes (WRO) in patients with quiescent UC who received one year of MMX mesalamine

treatment. **METHODS:** Data were from a multicenter, open-label study of patients with quiescent UC who received MMX mesalamine 2.4 g/day QD for twelve months. The Work Productivity and Activity Impairment Questionnaire: Specific Health Problem (WPAI:SHP), administered at baseline, six-month, and twelve-month visits, measured the impact of a patient's UC on 4 domains: absenteeism, presenteeism, overall productivity, and impairment in non-work activities. Repeated-measures analysis of variance assessed change in scores across visits. Analysis of covariance assessed the association between WRO and disease activity (covariates: age, gender, and BMI) by comparing WPAI:SHP scores between patients with clinically recurrent and non-recurrent UC at 12 months. **RESULTS:** WPAI:SHP scores were collected from 198 patients at baseline, 142 patients at six months, and 154 patients at 12 months/early withdrawal (endpoint). Stability of WRO across 12 months for the overall sample was evidenced by baseline-endpoint changes in mean scores of $< 2\%$ for each WPAI:SHP scale, with no statistically significant differences across visits (all $P > 0.05$). Patients with clinically recurrent UC at month 12 ($n=29$) scored significantly worse than non-recurrent UC patients ($n=113$) on presenteeism, overall productivity, and activity impairment, $P < 0.05$ for differences. **CONCLUSIONS:** Patients with quiescent UC who received MMX mesalamine 2.4 g/day QD showed stable WRO over the course of one year. Findings indicate that long-term MMX mesalamine treatment was associated with maintenance of WRO for patients with quiescent disease. This treatment regimen maintained clinical remission for the majority of patients, with recurrent patients showing worse WRO than non-recurrent patients.

Gastrointestinal Disorders – Health Care Use & Policy Studies

PGI32

AN INVESTIGATION INTO THE EXTENSIVE SPECTRUM OF AGENTS USED FOR THE MANAGEMENT OF POST-OPERATIVE ILEUS

Richard L¹, Kusel J², Hamerslag L², Leonard SA²¹Norgine Limited, Uxbridge, UK, ²Costello Medical Consulting Ltd, Cambridge, UK

OBJECTIVES: Regardless of the wide variation in estimated incidence rates for post-operative ileus (POI), it is widely understood that gastrointestinal complications represent the most common post-operative morbidity type. In addition to the patient burden, the extension of hospital stay caused by POI (estimated to be between 3.2 and 8 days) can have an enormous economic impact, making this an important area of research. The objective of this literature review was to explore the various interventions investigated for the acceleration of gastrointestinal recovery after surgery and reduction of POI. **METHODS:** Comprehensive literature searches across online databases and horizon scanning were used to identify relevant literature. Literature was gathered on any intervention that had been assessed in a randomised clinical trial for the treatment of POI following abdominal surgery. **RESULTS:** Over 600 studies were identified as potentially relevant. Approximately one quarter of these assessed the broad spectrum of prokinetic pharmacological agents for the treatment of POI, as well as antiemetics, antibiotics and anaesthetics. In particular, research into new ghrelin agonists is underway. Next to this, the unfavourable effects of opioid analgesics on GI recovery were studied in numerous trials. Non-pharmacological methods to enhance recovery after surgery such as gum chewing, acupuncture and early feeding have also been investigated with mixed success. Many of the trials identified were dated, illustrating how long POI has remained an unresolved issue for clinicians and patients. **CONCLUSIONS:** Many different types of treatment, with varying mechanisms of action, have been clinically studied for the prevention or treatment of POI over the past 40 years. However, there is still no standard management paradigm to accelerate post-operative bowel recovery. The absence of an effective pharmacological agent licensed for this indication in Europe and significant variance in practice suggest an unmet clinical need, which should shape future research in this area.

PGI33

PREDICTORS OF DIRECT MEDICAL COSTS OF CROHN'S DISEASE AND ULCERATIVE COLITIS

Stark RG¹, Hunger MF², Reitmeir P¹, König HH³, Leidl R¹¹Helmholtz Zentrum Munich, Neuherberg (by Munich), Germany, ²Helmholtz-Zentrum München, German Research Center for Environmental Health, Neuherberg, Germany, ³University Medical Centre Hamburg-Eppendorf, Hamburg, Germany

OBJECTIVES: Cost predictions are useful to identify patients with special needs early. Crohn's disease (CD) and ulcerative colitis (UC) are complex conditions which are classified as Inflammatory Bowel Diseases (IBD). Disease onset in early adulthood leads to a long period of healthcare utilisation. The goal of this study was to determine the effect of disease activity and disease history on overall medical costs and to determine whether additional factors predict costs for CD and UC. **METHODS:** Medical history, demographic information and healthcare use (4 weeks) were reported by German IBD-Association members. Healthcare costs were calculated using national sources. Disease activity was determined using a German IBD Index. Patients classified their disease history as constantly-active, intermittently-active or in remission. Other factors evaluated were education, marital status, health insurance, an IBD-related operation (at least 3 months ago), smoking status and employment status. Missing values for determinants were imputed using the Markov-chain-Monte-Carlo method. Cost determinants were analysed using a gamma regression model, adjusting for age, sex, disease duration and for previous colectomy in UC patients. Costs of CD and UC were analysed separately. **RESULTS:** The 4-week mean direct medical costs were 424.44€ for CD ($n=241$) and 365.79€ for UC ($n=238$). Mean disease activity (CD: 3.3 UC: 3.2) was similar between the groups and 46% of both CD and UC subjects reported disease history as in