clinical rational for lumbar fusion surgery. Patients who underwent a ALIF, PLF or T/PLIF with stand-alone DDD had significantly lower total payments and significantly higher LOS patients with DDD. Patients with DDD diagnoses had significantly higher total payments and longer LOS compared to patients who underwent an ALIF, PLF, or T/PLIF without a comorbid diagnosis of DDD.

PSU32 A COMPARISON OF RESOURCE UTILIZATION AND MEDICAL CHARGES AMONG LUMBAR INTERBODY FUSION SURGICAL PATIENTS WITH AND WITHOUT REVISION

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OBJECTIVES: Compare resource utilization and medical charges among patients who had an anterior lumbar interbody fusion (ALIF), posterior lumbar interbody fusion (PLIF), or transforminal posterior lumbar interbody fusion (T-PLIF) and a subsequent revision to those with such a revision surgery. METHODS: The MedStat MarketScan databases from 2006 - 2009 were used for this retrospective analysis. Patients were included if had a ALIF, PLF, or T-PLIF and had continuous insurance coverage for 2 years post procedure. Revision patients were matched to non-revision patients at a 2:1 ratio based upon type of initial procedure, year of birth, sex, and region of residence Medical payments and resource utilization were compared between the two cohorts using t-statistics for continuous variables and chi-square statistics for categorical variables. RESULTS: In the 2 years post procedure, patients with a subsequent revision were significantly more likely to visit a physical therapist (92% vs 62%; P=0.0003), receive an epidural steroid injection (58% vs 47%; P=0.0074), or visit the emergency room with a diagnosis of back pain (20% vs 9%; P<0.0001). The average cost the initial surgery was similar between the two cohorts ($39,925 vs $42,412) while the mean cost associated with a revision surgery was $55,296 (std dev = $32,814). Total payments for the two cohorts, ignoring the cost of the initial procedure was $33,180 for patients who did not have a subsequent revision, and $89,770 for patients with a subsequent revision (P=0.001). These differences translate into a $56,590 cost premium associated with a revision surgery – 62% of which can be accounted by the revision surgery itself. CONCLUSIONS: Revision surgery was associated with significantly more resource utilization post initial surgery. Comparing costs among the two groups reveals an approximately 3% cost premium associated with revision surgery and that such costs extended beyond the cost of the revision surgery itself.

PSU33 CHARACTERISTICS AND BURDEN OF TUBEROUS SCLEROSIS COMPLEX: RESULTS OF A PATIENT AND CAREGIVER SURVEY IN THE UNITED STATES


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OBJECTIVES: Tuberous sclerosis complex (TSC) is a rare genetic disorder characterized by benign tumor growth in multiple organs. TSC’s subsequent and varied impacts on patients are typically treated by many different types of diseases. This study aimed to assess the principal clinical manifestations imposed by the disease, and the major types of health care resource utilization experienced among TSC patients in the United States (US). METHODS: An Institutional Review Board-approved Internet-based survey of US TSC patients and caregivers solicited information on prevalence of manifestations, disease management, and impact on patients. Descriptive statistics were calculated. RESULTS: Of the 386 initial respondents, 53% were patients and 47% were caregivers. Surveys provided data on 380 patients, of whom 59% were female and the mean age was 30.4 years (SD: 17.3; median: 32.5). The majority of patients reported experiencing skin lesions (53%) while seizures, cognitive concerns, cerebral tumors, angiomylipomas (AML), and subependymal giant cell astrocytomas (SEGAs) were reported by 46%, 36%, 36%, and 23%, respectively. Ninety patients (24%) reported only one manifestation of TSC, while 18%, 14%, and 38% reported 2, 3, or 4 or more. Over half of patients (52%) had some type of TSC-related surgery including but not limited to brain surgery (33%), embolization (12%), nephrectomy (7%), kidney transplant (6%), and laser surgery (12%). Patients with SEGAs reported the highest level of brain surgery (55%). Among patients with AMLs, embolization for kidney lesions (28%), nephrectomy (12%) and kidney transplant (8%) were reported. CONCLUSIONS: In this analysis of initial respondents, TSC presents significant, and varied, epidemiological and clinical burden in the US. Patients with SEGAs and AMLs seemed to experience the highest rates of invasive procedures among all patients with TSC.

PSU34 EPIDEMIOLOGICAL MODELING OF PATIENT SURVIVAL AFTER LIVER TRANSPLANTATION IN GERMANY

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OBJECTIVES: The number of performed heart transplantations per year are well published and can easily be accessed. Nevertheless, there are no exact figures on the prevalence and incidence of patient survival after heart transplantation in Germany, although these patients have high health care needs. Purpose of this study was to generate these missing figures for the past and present as well as taking an outlook into the future development of the cumulative liver transplant patient population until the year 2030. To account for uncertainty, a 1.000 replication Monte-Carlo-Simulation with random samples within published ranges of the input parameters was run. RESULTS: According to our model currently (2012) about 7,771 (95% Confidence interval: 7,701 – 7,844) patients with prior liver transplantation live in Germany. Until 2030 the model estimates an increase of the population size to 17,490 (95% CI: 17,105 – 17,875) people. The number of performed liver transplantations is estimated at 3,068 (95% CI: 2,968 – 3,148) in 2030. CONCLUSIONS: With current assumptions the liver transplant patient population size will continuously grow. The growth of this population will primarily be limited by available organs for transplantation.

PSU35 EPIDEMIOLOGICAL MODELING OF PATIENT SURVIVAL AFTER HEART TRANSPLANTATION IN GERMANY

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OBJECTIVES: The number of heart transplantations per year are well published and can easily be accessed. Nevertheless, there are no exact figures on the prevalence and incidence of patient survival after heart transplantation in Germany, although these patients have high health care needs. Purpose of this study was to generate these missing figures for the past and present as well as taking an outlook into the future development of the cumulative liver transplant patient population until the year 2030. To account for uncertainty, a 1.000 replication Monte-Carlo-Simulation with random samples within published ranges of the input parameters was run. RESULTS: According to our model currently (2012) about 7,771 (95% Confidence interval: 7,701 – 7,844) patients with prior liver transplantation live in Germany. Until 2030 the model estimates an increase of the population size to 17,490 (95% CI: 17,105 – 17,875) people. The number of performed liver transplantations is estimated at 3,068 (95% CI: 2,968 – 3,148) in 2030. CONCLUSIONS: Even though the peak number of patients with heart transplants according to our model has occurred in the past, still a considerable heart transplant patient population is living in Germany and seeking health care services for their needs.

PSU36 EVIDENCE BASED MEDICINE: A CASE STUDY OF ITS APPLICATION TO INNOVATIVE SURGICAL PROCEDURES IN THE UK

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INTRODUCTION: Evidence based medicine (EBM) is frequently used as the basis for clinical guidelines and reimbursement recommendations. The hierarchy of evidence is: Level I - randomized controlled trials (RCTs); Level II - nonrandomized cohort studies; Level III - case series; Level IV - expert opinion. RCTs are generally required when developing clinical guidelines or reimbursement recommendations for drugs. OBJECTIVES: The purpose of this case review is to illustrate an application of EBM to an innovative surgical procedure and highlight how the recommendations for use changed with new evidence. METHODS: NICE guidelines for arthroscopic surgery for femoro-acetabular impingement were reviewed. This case study was selected because the treatment modality represents a new surgical technology in which guidelines for coverage recommendations, first promulgated in 2007, were later changed in 2011, illustrating the impact of additional evidence generation. RESULTS: In 2007, efficacy evidence considered by NICE were two case series, with 158 and 10 patients respectively. In 2011, efficacy evidence considered by NICE covered 1126 patients from 3 randomized controlled trials. CONCLUSIONS: Primarily based on statistics from the Federal Statistical Office and liver transplant quality reports of the German AQUA-Institute, relevant parameters and data were identified and used to develop an epidemiological model. Key drivers of the model are yearly patient survival rates as well as growth rates of performed heart transplantations. The model starts in 1987 and is able to predict the future development of the cumulative liver transplant patient population until the year 2030. To account for uncertainty, a 1.000 replication Monte-Carlo-Simulation with random samples within published ranges of the input parameters was run. RESULTS: According to our model currently (2012) about 4.072 (95% Confidence interval: 4.028 – 4.116) patients with prior heart transplantation live in Germany. Until 2030 the model estimates a decrease of the population to 3.028 (95% CI: 2.980 – 3.077) people. Peak number of patients after heart transplantation was estimated at 2007: 4.225 (95% CI: 4.192 – 4.257). The number of performed heart transplantations is estimated at 268 (95% CI: 261-273) in 2030. CONCLUSIONS: Even though the peak number of patients with heart transplants according to our model has occurred in the past, still a considerable heart transplant patient population is living in Germany and seeking health care services for their needs.

PCN1 USE OF THE 5-HT3 RA ANTIEMETICS IN THE PREVENTION AND TREATMENT OF RADIATION INDUCED NAUSEA AND VOMITING

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OBJECTIVES: Radiation-induced nausea and vomiting (RINV) is commonly experienced by cancer patients undergoing radiation treatment. Current NCCN guidelines recommend combining 5-HT3-RA and dexamethasone for the prevention and treatment of RINV. The purpose of this study was to examine the incidence of 5-HT3-RA utilization and subsequent RINV, in patients diagnosed with colon cancer and undergoing radiation treatment.

METHODS: This study is a retrospective analysis of pharmacy claims in a commercially-insured U.S. patient population. The study identified continuously enrolled adult patients diagnosed with colon cancer who received radiation treatment during the period from 4/1/2007 to 8/31/2009. Patients received radiation therapy were then stratified into health states: toxicity (TOX), time without symptoms of disease (TOD), and death (DEATH). The index date was the week of initiation of radiation treatment and patients were followed for 30 days. Prophylactic administration of a 5-HT3-RA was defined by medication on the day of or the day prior to radiation therapy. The incidence of RINV was calculated from medical claims data, and the treatment was determined through a prescription or electronic visit summary diagnosis of RINV. RESULTS: A total of 2,400 patients were identified as meeting the inclusion and exclusion criteria for the study. Average age of patients was 57.6 years old and 43.8% were female. Radiation therapy included localized treatment (48.6%), total body irradiation (30.9%), or both (20.5%). Of the patients identified, 73.9% received no 5-HT3-RA, 5.2% were treated prophylactically, and 21.1% received a 5-HT3-RA in the days after radiation therapy. Of the patients who received the 5-HT3-RA prophylactically, 58.2% were treated with an oral formulation. Incidence of subsequent RINV for all patients, independent of rescue medication use, was 15.2%. CONCLUSIONS: The results showed use of the 5-HT3-RA antiemetics in patients undergoing radiation treatment for colon cancer was uncommon and prophylactic administration was relatively rare.