OBJECTIVES: To determine factors affecting costs (based on main payer’s perspective) and length of hospital stay in patients hospitalised for CAP in Germany. METHODS: Within an international study (Germany, France, Japan, USA), 12 months’ prospective data (July 2001 to June 2002) of 603 CAP-patients (14 sites) were collected by chart review in Germany and analysed for factors likely to affect costs and length of hospitalisation (linear- and Cox-PH-regressions, respectively). Costs were calculated from the perspective of the German public health insurance (GKV) for the year 2001, based on daily fees per ward minus patient deductible/co-payment. RESULTS: Patients (mean age 63 years) were predominantly male (58%), living with family (64%), retired (56%) and publicly insured (88%); 82% had any prior disease, 43% prior respiratory diseases. At hospitalisation, mainly due to worsening of pneumonia (55%), the mean modified FINE score was 90 (low/moderate risk). A total of 57% of patients had low (classes I, II, III), 23% moderate (class IV) and 20% high (class V) modified FINE scores. Besides antibiotics, concomitant medications were mostly cough/cold suppressants. The median duration of hospitalisation was 12 days. Costs were calculated to amount to an average of 3892€ per hospital stay. Extrapolation to population levels results in almost 1000€ million CAP-related costs per year. Factors associated with both higher costs and prolonged hospital stays (p < 0.05) included combination/multiple antibiotic treatment and inappropriate antibiotic treatment (i.e. antibiotics given not likely to/did not cover CAP-related pathogens), current smoking status and non-teaching hospital. Multimorbid patients were likely to incur higher costs. Increasing age was correlated with longer hospital stays. CONCLUSIONS: In Germany, treatment of patients hospitalised for CAP is costly from the payor’s perspective and amounts to almost 1000€ million per year. Appropriate antibiotic treatment was associated with lower costs and shorter hospital stays.

THE COSTS OF SEVERE SEPSIS MANAGEMENT IN INTENSIVE CARE UNITS IN POLAND

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OBJECTIVES: To evaluate the clinical outcomes and direct costs associated with the treatment of severe sepsis in intensive care units (ICUs) in Poland. METHODS: Web-based Severe Sepsis Registry was founded to collect clinical data and information on resources used for severe sepsis patients management in Poland. Patients were hospitalized in 108 ICUs from 1st April 2003 to 2nd April 2004. As payer’s perspective was adapted only direct medical ICUs costs were analyzed and encompassed: fixed costs of ICU stay, organ support, medical procedures and drugs. Unit costs were calculated using drugs retail prices, hospital accounts systems data and medical procedures tariffs contracted by National Health Found. The cost-effectiveness was assessed based on raw survival rates and mean treatment costs for the DAA and ST groups as documented in SSR. Additionally regression model on effectiveness and associated costs was constructed to control for case-mix. Costs are expressed in PLN (1PLN = 0.4808€ PPP2003). RESULTS: The rate of ICUs survival amounted to 61% and 44% for the DAA and ST group, respectively. The corresponding mean costs amounted to 98,987 PLN (47,593€) and 49,568 PLN (23,832€). Based on raw data from SSR the additional cost per one death avoided with DAA was calculated on 284,537 PLN (136,815€). In regression model DAA was found to significantly increase the survival rate (OR = 2.651; 95%CI: 1.67–4.21) resulting in 4.93 (95%CI: 2.68–6.96) life years gained per patient. Thus the additional cost per one death avoided and cost per life year gained with DAA amounted to 183,019 PLN (87,996€) and 7487 PLN (3600€), respectively. CONCLUSIONS: DAA is cost-effective in severe sepsis treatment.

ASSESSING THE COST-EFFECTIVENESS OF DROTRECOCIN ALFA (ACTIVATED) IN SEVERE SEPSIS IN POLAND

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OBJECTIVES: To assess the cost-effectiveness of drotrecogin alfa activated (DAA) compared to standard therapy (ST) in severe sepsis in Poland. METHODS: Data on clinical effectiveness and resources used were derived from Polish Severe Sepsis Registry (SSR) of patients hospitalized in 108 ICUs from 1st April 2003 to 2nd April 2004. The effectiveness was defined as the ICU stay survival and life year gained. Only direct medical ICUs costs were analyzed. Unit costs were calculated using drugs retail prices, hospital accounts systems data and medical procedures tariffs contracted by National Health Found. The cost-effectiveness was assessed based on raw survival rates and mean treatment costs for the DAA and ST groups as documented in SSR. Additionally regression model on effectiveness and associated costs was constructed to control for case-mix. Costs are expressed in PLN (1PLN = 0.4808€ PPP2003). RESULTS: The rate of ICUs survival amounted to 61% and 44% for the DAA and ST group, respectively. The corresponding mean costs amounted to 98,987 PLN (47,593€) and 49,568 PLN (23,832€). Based on raw data from SSR the additional cost per one death avoided with DAA was calculated on 284,537 PLN (136,815€). In regression model DAA was found to significantly increase the survival rate (OR = 2.651; 95%CI: 1.67–4.21) resulting in 4.93 (95%CI: 2.68–6.96) life years gained per patient. Thus the additional cost per one death avoided and cost per life year gained with DAA amounted to 183,019 PLN (87,996€) and 7487 PLN (3600€), respectively. CONCLUSIONS: DAA is cost-effective in severe sepsis treatment.

A COMPARISON OF COST-EFFECTIVENESS OF PEGINTERFERON ALFA-2A (40 KD) (PEGASYS) PLUS RIBAVIRIN (COPEGUS) VERSUS INTERFERON ALFA-2B PLUS RIBAVIRIN AS FIRST TREATMENT OF CHRONIC HEPATITIS C IN THE UK

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OBJECTIVES: In adults with CHC, peginterferon alfa-2a (40 KD)/ribavirin obtains a higher rate of sustained virological response (SVR) than interferon alfa-2b/ribavirin, in both genotypes 1 and 2/3 and high and low viral loads. However, it is still unknown whether this increase in cost-effectiveness from the perspective of the National Health Service (NHS)in the UK. METHODS: We constructed a 7-stage Markov model in which cohorts of hepatitis C virus (HCV) genotype 1 and 2/3 patients received peginterferon alfa-2a (40 KD)/ribavirin or interferon alfa-2b/ribavirin for 48 and 24 weeks, respectively, and were followed for their expected lifetime. The SVRs to peginterferon alfa-2a (40 KD)/ribavirin and interferon alfa-2b/ribavirin were
46% and 36% for HCV genotype 1 and 76% and 61% for genotype 2/3. The impact of predictability testing at 12 and 24 weeks on the cost-effectiveness ratio was explored in the model. Quality of life and costs were based on literature and on estimated UK treatment patterns, respectively. Costs were discounted at 6% and benefits at 1.5%. RESULTS: In genotype 1 patients, peginterferon alfa-2a (40KD)/ribavirin increases quality-adjusted life expectancy (QALY) by 0.43 years compared to interferon alfa-2b/ribavirin. The incremental cost per QALY gained is £5596. In genotype 2/3 patients, peginterferon alfa-2a (40KD)/ribavirin increases QALY by 0.65 years and is cost saving (dominant) to the NHS. The incremental cost-effectiveness ratio for all genotypes was £914. At a cost effectiveness threshold of £30,000 probabilistic sensitivity analysis demonstrated peginterferon alfa-2a was the cost effective treatment strategy in 96% of the simulations. CONCLUSIONS: In the UK setting, peginterferon alfa-2a (40KD)/ribavirin is cost-effective compared with conventional interferon alfa-2b/ribavirin for treatment of naive adults with CHC in genotype 1 patients and a cost-saving/dominant therapy in genotype 2/3 patients.

COST-MINIMIZATION ANALYSIS OF VORICONAZOLE AND CASPOFUNGIN FOR THE TREATMENT OF INVASIVE CANDIDA AND ASPERGILLOSIS INFECTIONS IN SPAIN

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OBJECTIVES: There are no studies carried out to date comparing the cost of systemic fungal infection treatment with voriconazole and caspofungin. The aim of the study was to estimate the in-hospital cost of voriconazole versus caspofungin, plus oral continuation therapy (OCT), for the treatment of invasive Candida and Aspergilllosis infections in Spain. METHODS: A cost-minimization analysis model was performed from the hospital perspective in year 2004, as the same efficacy was assumed. Data on duration of treatment (intravenous + oral) and weight of patients were obtained from a local study: The Fungcost study. The incidence of drug-related adverse events was obtained from published clinical trials. Only direct cost for each episode were considered; medications (injectable and oral) at their hospital selling prices, the cost stemming from a drug-related adverse reactions treatment; and administration costs. Oral voriconazole was considered as the OCT for voriconazole arm, and oral fluconazol or itraconazol for caspofungin arm. Mean expected cost and incremental cost were calculated. Univariate and bivariate sensitivity analysis were carried out varying patient’s weight and intravenous treatment duration. RESULTS: The mean cost expected per episode (mean weight 68.6Kg) was 6302.97€ (cost of intravenous treatment 5798.33€) for voriconazole, and 7487.29€ (6982.65€) for caspofungin in the treatment of invasive aspergillosis, with an incremental cost of 1184.32€. The treatment of candidiasis showed a mean costs of 6154.82€ (cost of intravenous treatment 5951.14€) and 7182.71€ (7169.49€), respectively, with an incremental cost of 1027.89€. Results were robust to any intravenous duration of treatment, and sensitive to an increase of patient’s weight above 103.3 Kg in aspergillosis and 101.1 Kg in candidiasis. CONCLUSIONS: Using costs and treatments patterns of fungal infections in Spain, voriconazole is more cost-effective than caspofungin in the treatment of invasive candidiasis and aspergillosis for patients below 101.1/103.3 kilogrammes, respectively.

COST-BENEFIT ANALYSIS OF ANTI-INFLUENZA VACCINATION IN A PUBLIC HEALTH CARE UNIT

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OBJECTIVES: To estimate costs and benefits of a preventive anti-influenza vaccination in a group of employees of ULSS 17 (an public health care district), in order to define a scheme of cost-benefit analysis to be used for other strategies of vaccination and in other contexts. METHODS: In an observational study conducted from December 2002 to April 2003, 107 employees (about 5% of the whole staff of ULSS 17), who voluntarily underwent the vaccination, were compared with 107 non-vaccinated employees working in the same context and matched for age, gender and working category. The outcome was evaluated by checking records from the personnel department about absence from work and related causes, including influenza. Costs and benefits of the anti-influenza vaccination from the ULSS point of view were subsequently calculated. RESULTS: Among vaccinated people absences from work were 23% less than among non-vaccinated and working days lost were 30% less than non vaccinated employees. The ratio between the benefits of the vaccination strategy (less working days lost) and its cost was 4.2. The convenience emerges also through the sensitivity analysis, which took in consideration the mean cost of a working day for the enrolled employees, it showed that the cost-benefit ratio range from 4.5 to 11.7. CONCLUSIONS: The results of this study suggest that the implementation of the anti-influenza vaccination strategy in ours sample of working people was cost saving. The cost-benefit analysis used in this study could also be used for other vaccination strategy and in other contexts.

MODELLING THE COST-EFFECTIVENESS OF ACTIVATED PROTEIN C (XIGRIS®) TREATMENT OF SEPTIC PATIENTS IN INTENSIVE CARE UNITS IN HUNGARY

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OBJECTIVE: In our study we aimed to assess and compare the cost-effectiveness of sepsis treatment with and without Activated Protein C in Hungary for the year 2002. METHODS: To calculate the average efficiency of treatment of a septic patient in ICU in Hungary we constructed a model. This model was made up of three parts. In the first part, we defined a septic patient cohort based on the age and gender distribution of all the septic cases treated in ICU in Hungary in 2001. This patient cohort entered into the second part of the model where we developed a time dependent Markov model to describe and analyse the route of Hungarian septic cases through a 28-day-long period. We defined three Markovian states: survival in ICU, leaving ICU or the hospital alive, and death in or out of ICU. Transfer probabilities were defined for each of the 28 days on the basis of data collected for all septic events treated in ICUs in Hungary in 2001. In the Activated Protein C (Xigris®) treatment arm the transfer probabilities of the above-described model was modified on the basis of results of a clinical study. In the third phase, patients’ life-long survival was modelled based on the average age-specific life expectancy of the Hungarian. Survival of the septic patients was corrected by a factor of 0.51 taken from the international literature. Efficiency was calculated from societal viewpoint. RESULTS: Average cost-effectiveness of sepsis treatment was...