

PIN28

COST-OF-ILLNESS ANALYSIS OF CANDIDEMIA IN PATIENTS ON THE INTENSIVE CARE UNIT

Heimann S, Cornely OA, Wisplinghoff H, Vehreschild MJ, Franke B, Glossmann J, Vehreschild J

University Hospital of Cologne, Köln, Germany

OBJECTIVES: Direct and indirect costs caused by candidemia in ICU patients are currently unknown. We performed an analysis comparing costs depending on the type of antifungal treatment. **METHODS:** Data of patients from the University Hospital of Cologne with at least one blood culture positive for *Candida* spp. while staying on the ICU between 2005 and 2010 were documented into a database. Indirect costs caused by illness-conditioned disability and death before retirement age were calculated using the friction cost method. Analysis was split for patients treated with new antifungals (i.e. echinocandins, liposomal amphotericin B, or voriconazole) or conventional antifungals (i.e. amphotericin B deoxycholate or fluconazole). **RESULTS:** Out of 147 identified patients, 45 received new and 66 conventional antifungals, and 36 patients were excluded from analysis (21 died within 96 hours after positive blood culture, seven were rated as contamination, eight patient files were missing). Mean APACHE IV score was 113 (105.7-121.2) vs. 96 (90.3-100.8, $P < 0.001$). Mean direct costs per patient in the new and the conventional antifungal groups were as follows: ICU treatment 24,922 € (95% CI: 17,054-31,789 €) vs. 17,971 € (95% CI: 13,203-22,740 €, $P = n.s.$), antifungal treatment 4,271 € (95% CI: 2,983-5,560 €) vs. 2,079 € (95% CI: 1,246-2,912 €, $P = 0.005$), total direct costs 41,060 € (95% CI: 30,184-51,935 €) vs. 28,885 € (95% CI: 22,116-35,654 €, $n.s.$), indirect costs per patient due to productivity loss of illness-related disability 1,202 € (95% CI: 474-1,930 €) vs. 1,087 € (95% CI: 570-1,604 €, $n.s.$), due to death before retirement age 1,047 € (95% CI: 236-1,858 €) vs. 1,309 € (95% CI: 584-2,034 €, $n.s.$). Twenty-five (56%) and 33 (50%) patients survived hospitalization, 20 (44%) and 22 (33%) patients survived one year after diagnosis. **CONCLUSIONS:** Our cost-of-illness analysis shows the high treatment costs of patients with candidemia. In our analysis, treatment with new antifungals was associated with higher costs. Although sicker patients were significantly more likely to receive new antifungals, outcomes were comparable to less sick patients treated with conventional antifungals.

PIN29

LENGTH OF STAY AND COST DUE TO RECURRENT CLOSTRIDIUM DIFFICILE INFECTIONS (CDI) AT A UNIVERSITY HOSPITAL IN FINLAND

Agthe N¹, Mattila E², Purmonen T¹, Kanerva M²

¹Oy Medfiles Ltd, Kuopio, Finland, ²Helsinki University Hospital, Helsinki, Finland

OBJECTIVES: The European Society of Clinical Microbiology and Infectious Diseases (ESCMID) has highlighted recurrence as the most important problem in the management of CDI. There is lack of knowledge regarding length of stay (LOS) and cost associated with recurrent *Clostridium difficile* infection (CDI). Our objective was to collect real life data for estimating days of hospitalization and costs attributable to recurrent CDI. **METHODS:** A prospective observational study was conducted at Helsinki University Central hospital during February 2007 and May 2008. The CDI patients were identified from the microbiology laboratory reports to one of the six acute wards included in the study. Only health care associated CDI cases were included. The recurrence of CDI was defined as a new positive sample less than eight weeks after the first one. The patients had no previous history of CDI one month prior to first positive sample. Resource use data were extracted from the medical records using Appropriateness Evaluation Protocol-based methodology. Unit costs were obtained from literature, hospital administration, laboratory and pharmacy. **RESULTS:** During the 16 months study period, 72 CDI patients were identified, which corresponds to incidence of 0.7-3.8/1,000 patient days. Of those, 7% were recurrent cases (5 patients). Mean LOS for recurrent cases was 3.17 times longer than among non-recurrent cases. The mean incremental cost for recurrent CDI was €6,800 which was 2.52 times higher than the average incremental cost of the total CDI population (€2,700, and €2,300 for not recurrent cases). Most of the resource use came from additional treatment days (94% of total cost). Other costs were due to laboratory tests, medication and isolation. **CONCLUSIONS:** Recurrent CDI is associated with significantly longer LOS and higher costs compared to the average CDI population. The main cost driver between the groups was length of stay.

PIN30

VARICELLA, A COST OF ILLNESS HUNGARIAN STUDY

Tóth E¹, Érsek K²

¹Healthware Consulting Ltd., Budapest, Hungary, ²Corvinus University of Budapest, Budapest, Hungary

OBJECTIVES: Varicella (chickenpox) is one of the most common illness of children, most typical for the 2-6 years age group. In 2.5% of healthy children complications occur (bacterial overinfection, meningitis, meningoencephalitis, pneumonia are the most frequent complications), the infection is potentially life-threatening among healthy and might be directly life-threatening among immunocompromised patients. Varicella can be prevented by live attenuated vaccine. According to WHO recommendation these vaccines are safe, effective and should be implemented into the recommended age-related vaccines. International guidelines recommend the vaccine, although it is not part of the obligatory vaccination schedule in Hungary, nor is covered by reimbursement. **METHODS:** In our research we aimed to examine the consequences of varicella. We calculated the disease of burden in Hungary by the utilization of evidences from literature, health care provision data of Hungarian National Health Insurance Fund Administration as well as questionnaire survey. **RESULTS:** Direct and indirect costs of varicella-related health care provision are significant according to our analysis based on HNHIFA data and questionnaire survey. Our results showed that annually almost 1 billion HUF expendi-

ture caused by varicella. **CONCLUSIONS:** Our analysis determines the disease burden of varicella and emphasizes the importance of prevention. Increasing the rate of vaccination, epidemics can be held up, majority of the serious and complicated cases can be avoided, thus their provisional cost consequence can be decreased. From the societal viewpoint the costs that can be saved by vaccination are even higher as remarkable reduction can be achieved in indirect costs due to the rare, less serious and shorter duration breakthrough cases.

PIN31

BURDEN OF DISEASE AND ECONOMIC IMPACT OF DENGUE AND SEVERE DENGUE IN COLOMBIA: 2011

Castañeda-Orjuela CA¹, Diaz H², Camargo G², Olarte F², De la Hoz-Restrepo F¹

¹Universidad Nacional de Colombia, Bogota, NA, Colombia, ²Universidad Nacional de Colombia, Bogota, Bogota, Colombia

OBJECTIVES: About 50 million dengue infections occur every year worldwide. New dengue vaccines are currently in development and policymakers need appropriate economic studies to determine their potential impact. This study aims to assess the burden of dengue disease in Colombia and its costs. **METHODS:** We estimated the disease burden of dengue (D) and severe dengue (SD) in Colombia for 2011-2014 based on a dynamic model designed with the best available evidence and validated with the occurrence data. The annual number of D and SD cases receiving medical care were determined. We calculated the average cost of care per patient with D and SD based on a bottom-up costing of cases attended in the Colombian health facilities, additional costs were estimated from programs of vector control dengue at different administrative levels. Based on the occurrence of disease and extrapolation of national vector control programs we estimated a total annual cost of burden of dengue in Colombia. **RESULTS:** Our dengue model estimated in 2011 34,751 D consults (13,900 outpatients, 20,851 inpatients), 988 SD cases, and 102 (78-123) deaths due to dengue. In 2012 22,247 D (8899 in- 13,348 out-patients), 863 SD, and 103 (79-124) deaths. In 2013 27,588 D (11,035 in- 16,553 out-patients), 1032 SD and 105 (80-126) deaths. Finally in 2014 25,957 D (10,383 in- 15,574 out-patients), 913 SD, and 106 (80-127) deaths. The total attention costs in 2011 raised to US\$ 16.86 million. That year the total cost of Dengue's vector program amounted to US\$ 37.08-42.41 million. The total annual cost of dengue would amount to US\$ 53.94-59.27 million in a year without outbreak. **CONCLUSIONS:** Burden of dengue disease in Colombia involves a high economic impact to the health system. In 2011 between 28.4-31.3% correspond to medical attention cost and between 68.7-71.6% are due to dengue vector control program.

PIN32

ECONOMIC EVALUATION OF BOCEPREVIR FOR THE TREATMENT OF PATIENTS WITH GENOTYPE 1 CHRONIC HEPATITIS C VIRUS INFECTION IN HUNGARY

Odhiambro R¹, Chhatwal J², Ferrante SA³, El Khoury A⁴, Elbasha E⁵

¹MSD Pharma Hungary Kft., Budapest, Hungary, ²University of Pittsburgh, Pittsburgh, PA, USA,

³Merck Sharp and Dohme Corp., Whitehouse Station, NJ, USA, ⁴Merck Sharp and Dohme,

Whitehouse Station, NJ, USA, ⁵Merck Sharp & Dohme Corp., Upper Gwynedd, PA, USA

OBJECTIVES: Recent randomized, placebo-controlled clinical trials (SPRINT-2; RESPOND-2) demonstrated that the triple combination of peginterferon (PEG), ribavirin (RBV) and boceprevir (BOC) was more efficacious than standard therapy of PEG-RBV alone in treatment of patients with genotype 1 chronic hepatitis C virus (GI HCV) infection. The objective of this study was to evaluate the cost-effectiveness of triple therapy in both treatment-naive and treatment-experienced patients in Hungary. **METHODS:** A Markov-model was developed to investigate the long-term clinical benefits and the cost-effectiveness of the triple therapy from the Hungarian payer perspective. Health states within the model were defined using METAVIR fibrosis scores (F0-F4), decompensated cirrhosis (DC), hepatocellular carcinoma (HCC), liver transplant (LT), and liver-related deaths (LD). Efficacy data was estimated using SPRINT-2 and RESPOND-2 studies, and disease progression rates and utilities used in the model were estimated from published studies. Data on probability of liver-transplantation and cost estimates were based on an analysis of the Hungarian Sick Fund database. Costs and benefits were discounted at 5%. **RESULTS:** Triple therapy is projected to increase the life expectancy by 0.98 and 2.39 years and the quality-adjusted life years (QALY) by 0.59 and 1.13 in comparison with treatment with PEG-RBV in treatment-naive and treatment-experienced patients, respectively. The corresponding incremental cost-effectiveness ratios were HUF7,747,962 (EUR 26,717) and HUF5,888,240 (EUR20,304) per QALY, respectively. The lifetime incidence of severe liver disease events (DC, HCC, LT, LD) decreased by 41% and 61% in these patient groups in comparison with treatment with PEG-RBV alone. **CONCLUSIONS:** The addition of boceprevir to standard therapy for the treatment of patients with G1 chronic HCV infection in Hungary is cost-effective using a commonly used willingness to pay threshold of HUF8,48 million (3x GDP per capita).

PIN33

CORSAR-STUDY (COST AND RESOURCE UTILISATION STUDY IN ANTIRETROVIRAL TREATED PATIENTS):

Stoll M¹, Kuhlmann A², Hower M³, Heiken H⁴, Gerschmann S¹, Klauke S⁵, Lutz T⁵, Bogner J⁶, Degen O⁷, van Lunzen J⁷, Bachmann C³, Stellbrink H⁸, Schmidt W⁹, Leistner I⁹, Mahlich J¹⁰, Ranneberg B¹¹

¹Medizinische Hochschule Hannover, Hannover, Germany, ²Leibniz Universität Hannover, Hannover, Germany, ³Klinikum Dortmund, Dortmund, Germany, ⁴Private Practice, Hannover, Germany, ⁵Infektologie, Frankfurt, Germany, ⁶Universität München, Munich, Germany, ⁷Infektologie Hamburg, Hamburg, Germany, ⁸ICH Study Center, Hamburg, Germany, ⁹Ärzteforum Seestrasse, Berlin, Germany, ¹⁰Janssen-Cilag GmbH, Neuss, Nordrhein-Westfalen, Germany, ¹¹Janssen Cilag, Neuss, Germany

OBJECTIVES: Data on actual cost of illness studies for HIV-infection in Germany are lacking. The objective of CORSAR is to collect comprehensively and prospectively