Cost of Illness Analysis of Candidemia in Patients on the Intensive Care Unit

Heinmann J, Cornely OA, Wispelhoff H, Vehreschild M, Franke B, Glossmann J, Vehreschild M
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 were included who were treated with one blood culture positive for Candida, while staying on the ICU between 2005 and 2010 were documented into a database. Direct 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) for 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: 13,202-22,740), P = n.s.; indirect treatment 4,271 € (95% CI: 2,983-5,560) vs. 2,079 € (95% CI: 1,246-3,912), 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 1,022 € (95% CI: 476-1,560) vs. 1,315 € (95% CI: 670-2,156, € P = 0.014), total costs 42,082 € (95% CI: 31,599-52,565) vs. 32,198 € (95% CI: 25,620-38,776), P = 0.014, mean incremental costs 931 € (95% CI: 33,2-1,930, 51) vs. 1,047 € (95% CI: 236-1,858, 51) vs. 1,309 € (95% CI: 584-2,034, 51, n.s.). Twenty-five (56%) and 33 (50%) patients survived hospitalization, 20 (44%) and 22 (33%) patients surviving in the 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.

Length of Stay and Cost Due to Recurrent Clostridium Difficile Infections (CDI) at a University Hospital in Finland

Aghaee N1, Matilla E2, Pirttiniemi T3, Kanerva M3
1Medfiles Ltd, Kuopio, Finland, 2Helsinki University Hospital, Helsinki, Finland

OBJECTIVES: The European Society of Clinical Microbiology and Infectious Diseases (ESCMID) has highlighted recurrent recurrence (RR) as the most important problem in the management of CDI. There is lack of knowledge regarding length of stay (LOS) and costs 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 documented into a database. Indirect costs were calculated using the friction cost method. Analysis was split for patients depending 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 Recurrent model estimated in 2011 34,751 D consults (13,900 outpatient, 20,851 inpatients), 988 SD, and 102 (78-123) deaths due to dengue. In 2012 22,247 D (889 in - 13,348 outpatients), 863 SD, 701 (103-78-124) deaths. In 2013 27,582 D (1,035 in - 16,553 outpatients), 1032 SD and 105 (80-126) deaths. Finally in 2014 25,957 D (10,383 in- 15,574 outpatients), 913 SD, and 106 (80-127) deaths. The total attention costs in 2011 raised to US$16.86 million. That year the total cost of Dengu’s vector program amounted to US$ 37.00 million. The total treatment costs associated with 2013-201442 were 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 2011-2016 between 28.4-31.3% correspond to medical attention cost and between 68.7-71.6% are due to dengue vector control program.

Economic Evaluation of Boceprevir for the Treatment of Patients with Genotype 1 Chronic Hepatitis C Virus Infection in Hungary

Odhiambo RO, Chhatwal P, Ferrante SA, Ki Khoury A, Elshaba E
1Pharmaco Hungary Kft., Budapest, Hungary, 2University of Pittsburgh, Pittsburgh, PA, USA, 3Merck Sharp and Dohme Corp., Whitehouse Station, NJ, USA, 4Merck Sharp & Dohme Corp., 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 (CHC) 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 CDH (chronic hepatitis, cirrhosis, hepatocellular carcinoma (HCC), liver transplanted (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.

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 incidence 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 of PEG-RBV in treatment of patients with genotype 1 chronic hepatitis C virus (CHC) infection is cost-effective using a commonly used willingness to pay threshold of HUF8,48 million (3x GDP per capital).

CorSAR Study: Cost and Resource Utilisation Study in Antiretroviral Treated Patients

Stoll M1, Kuhlmann A2, Hower M1, Heiken H1, Gerschmann S4, Klauke S1, Lutz T4, Bogner P1, Degen O2, van Lunsen J1, Bachmann C1, Steihlkin H3, Schmidt W1, Leistner I1, Mahlich JC10, Ranneberg B11
1A¨ rzteforum Seestrasse, Berlin, Germany, 2Leibniz University Hannover, Hannover, Germany, 3Klinikum Dortmund, Dortmund, Germany, 4Private Practice, Hannover, Germany, 5Klinikum Schwerin, Schwerin, Germany, 6Universitätsklinikum Frankfurt, Frankfurt, Germany, 7Universitätsklinikum Erlangen, Erlangen, Germany, 8Universitätsmedizin Hamburg, Hamburg, Germany, 9ICU Study Center, Hamburg, Germany, 10Arztforum Seestrasse, Berlin, Germany, 11Janssen-Cilag GmbH, Neuss, Nordrhein-Westfalen, 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