diabetic foot infection but our model had several limitations/assumptions; consequently, the results should be interpreted cautiously. More clinical studies to evaluate oral antibiotics effectiveness are needed.

PIN13

ECONOMIC EVALUATION OF POSACONAZOLE VS. STANDARD AZOLE THERAPY IN THE PROPHYLAXIS AGAINST INVASIVE FUNGAL INFECTIONS IN PATIENTS WITH PROLONGED NEUTROPENIA IN CANADA

Tahami Monfared AA[1], O'Sullivan AK[2], Papadopoulos G[3]
[1]Schering-Plough Canada Inc, Kirkland, QC, Canada, [2]i3 Innovus, Medford, MA, USA, [3]Schering-Plough Corp, Kenilworth, NJ, USA

OBJECTIVE: Posaconazole has been demonstrated to be significantly superior to standard azole therapy in preventing invasive fungal infections (IFIs) ($P < 0.001$) and in reducing overall mortality ($P = 0.048$) among patients with prolonged neutropenia. In this study, cost-effectiveness of posaconazole was evaluated from the Canadian health care system perspective. **METHODS:** A trial-based decision analytical model was developed. Patients were assumed to receive prophylaxis with posaconazole or standard azole therapy (fluconazole, 81%; itraconazole, 19%). The probabilities of experiencing an IFI, IFI-related death, and all-cause mortality over 100 days post treatment were estimated. To extrapolate results beyond the trial period, the model was extended to a lifetime horizon using 1-month Markov cycles in which mortality rate is specific to the underlying disease as estimated from Statistics Canada and Surveillance, Epidemiology, and End Result (SEER) data. Pharmacotherapy and treatment costs associated with IFIs were estimated using published literature. The model was used to estimate costs, IFIs avoided, life-years gained, and the incremental cost-effectiveness ratio (ICER) of posaconazole versus standard azole therapy (2007 Canadian dollars). **RESULTS:** Posaconazole is associated with significant fewer IFIs (0.05 vs. 0.11) ($P = 0.003$), increased life-years (0.744 vs. 0.728), and (excluding costs of the underlying condition) slightly lower costs ($7147 vs. $7332) per patient relative to standard azole therapy over a lifetime horizon. A second-order probabilistic Monte Carlo sensitivity analysis was conducted to assess the effects of parameter uncertainty, particularly as they relate to treatment efficacy and the costs of an IFI. Results indicate that there is a 53% probability that posaconazole is cost saving versus standard azole therapy and a 70% probability that the ICER for posaconazole is at or below the $50,000 per life-year saved threshold. **CONCLUSION:** In addition to the proven efficacy, posaconazole appeared to be cost saving relative to standard azole therapy in the prevention of IFIs among high-risk neutropenic patients.

PIN14

COST-EFFECTIVENESS OF PEGINTERFERON-ALFA-2A (40 KD) ASSOCIATED WITH RIBAVIRIN IN THE TREATMENT OF PATIENTS WITH CHRONIC HEPATITIS C IN BRAZIL UNDER THE PRIVATE HEALTH CARE SYSTEM

Parana R[1], Sette H[2], Pessoa M[3], Crespo D[4], Barros F[5], Santos EA[6], Saggia MG[6], Tatsch F[6], Simoes R[6]
[1]Universidade Federal da Bahia, Salvador, BA, Brazil, [2]Universidade de São Paulo, Sao Paulo, SP, Brazil, [3]Instituto de Infectologia Emílio Ribas, Sao Paulo, SP, Brazil, [4]Universidade Federal do Para, Belem, PA, Brazil, [5]Universidade Federal de Pernambuco, Recife, PE, Brazil, [6]Roche Brazil, Sao Paulo, SP, Brazil

OBJECTIVE: Hepatitis C is a disease affecting approximately 180 million people worldwide (WHO 2006) and is one of the main causes of chronic hepatic disease. HCV infection progresses to chronic form in 80% of infected individuals. Approximately 20% progress to cirrhosis over 20 years and, consequently, a high risk of developing hepatocellular carcinoma population. We assessed the incremental cost-effectiveness ratio (ICER) of peginterferon alfa-2a (40 KD) plus ribavirin (PEG + RBV) versus interferon alfa-2b plus ribavirin (IFN + RBV) in the treatment of patients with chronic hepatitis C under the Brazilian payer perspective. **METHODS:** A Markov model was built to estimate the clinical and economic impact related to the incorporation of peginterferon-alfa-2a (40 KD). Clinical stages were based on liver histology, forms of cirrhotic decompensation, liver cancer and liver transplantation. A Delphi panel was performed for evaluating the direct medical resources related to each clinical stage in chronic hepatitis C, as well as costs from treatment with peginterferon-alfa-2a (40 KD), interferon alfa-2b and ribavirin. Effectiveness of treatment with peginterferon-alfa-2a (40 KD) was obtained from a multicenter, controlled, randomized trial involving 1121 naive patients with chronic hepatitis C (Fried et al, 2002). The model comprises a life-time horizon. We have assumed a discount rate of 3% for both costs and outcomes according to international recommendations (Gold et al, 1996). A sensitivity analysis was conducted using second-order Monte Carlo simulation. Tested parameters were costs per stage, treatment costs, discount rate, response rate to treatment, inflation rate and early patient distribution. **RESULTS:** The ICER of PEG + RBV versus no treatment was approximately –R$62,521 per quality-adjusted life year (QALY) gained. The ICER of PEG + RBV versus IFN + RBV was approximately –R$20,087 per QALY. **CONCLUSION:** The study suggests peginterferon alfa-2a (40 KD) and ribavirin to be a dominant therapy for treating hepatitis C in the private health care system in Brazil.

PIN15

ECONOMIC EVALUATION OF TIPRANAVIR IN THE TREATMENT OF HUMAN IMMUNODEFICIENCY VIRUS

Risebrough N[1], Simpson KN[2], Mittmann N[1]
[1]Sunnybrook Health Sciences Centre, Toronto, ON, Canada, [2]Medical University of South Carolina, Charleston, SC, USA

OBJECTIVE: Tipranavir plus ritonavir (TPV/r) and an optimized background (OB) antiretroviral regimen delays virologic failure, reduces viral load and increases CD4 count compared to patients treated with comparator protease inhibitors, co-administered with ritonavir (CPI/r) and OB alone. The objective was to investigate the long-term cost, outcomes and cost-effectiveness of TPV/r + OB compared to CPI/r + OB in the Canadian health care system. **METHODS:** A Markov model was developed and populated with information on 48-week viral load and CD4 cell count response from two randomized controlled trials (RESIST 1 and RESIST 2) and HAART-era published literature. Resource use and cost data was obtained from a Canadian study and published sources. Future costs and outcomes were discounted at 5%. The analysis calculated costs and outcomes from time of starting these regimens, until 90% of patients in each strategy had died (lifetime analysis). Cost-effectiveness was calculated as cost per life year (LY) gained and cost per quality-adjusted life year (QALY) gained. **RESULTS:** Total discounted lifetime costs for TPV/r + OB was $221,541 compared to $194,466 with CPI + OB. discounted life expectancy and QALYs were greater for TPV/r + OB compared to CPI/r + OB by 0.530 yrs and 0.516 QALYs, respectively. Incremental cost-effectiveness of TPR/r + OB was $51,058 per LY gained and $52,517 per QALY gained. Sensitivity analysis showed results were robust. **CONCLUSION:** TPV/r + OB provides superior clinical improvement to a population of highly treated HIV patients with limited treatment options. TPV/r + OB is predicted to improve life

expectancy and QALYs compared to CPI/r + OB with an incremental cost per additional year of life gained of $51,058 and the incremental cost per QALY of $52,517.

PIN16

COST-EFFECTIVENESS OF POSACONAZOLE VS. FLUCONAZOLE IN THE PROPHYLAXIS AGAINST INVASIVE FUNGAL INFECTIONS IN PATIENTS WITH GRAFT-VERSUS-HOST DISEASE IN CANADA

Tahami Monfared AA[1], O'Sullivan AK[2], Papadopoulos G[3]
[1]Schering-Plough Canada Inc, Kirkland, QC, Canada, [2]i3 Innovus, Medford, MA, USA, [3]Schering-Plough Corp, Kenilworth, NJ, USA

OBJECTIVE: Invasive fungal infections (IFIs) have emerged as the major infection-related cause of morbidity and mortality in patients undergoing transplantations. A recent RCT in allogeneic hematopoietic stem cell transplantation (HSCT) recipients with grade 2–4 or extensive chronic graft-versus-host disease compared the efficacy of posaconazole and fluconazole in the prevention of IFIs. At the end of the fixed 112-day treatment period, posaconazole was as effective as fluconazole in preventing IFIs (5% vs. 9%); significantly reduced breakthrough *Aspergillus* infections (2% vs. 7%, p = 0.0059); and decreased IFI-related mortality (1% vs. 4%; p = 0.0413). We evaluated posaconazole cost-effectiveness from the Canadian health care system perspective. **METHODS:** A trial-based decision-analytic model was developed. The probabilities of experiencing an IFI, IFI-related death, and death from other causes over 112 days post treatment were estimated. To extrapolate results beyond the trial, the model was extended to a lifetime horizon using 1-month Markov cycles in which mortality rate was specific to the underlying disease obtained from clinical data. Pharmacotherapy and IFI-related costs were estimated using published literature. The model was used to estimate costs, life-years saved (LYS), and the incremental cost-effectiveness ratio (ICER) of posaconazole vs. fluconazole (2007 CND$). **RESULTS:** Posaconazole appeared to be more effective with increased LYS (7.95 vs. 7.81) however, more costly ($16,784 vs. $11,760) than the alternative over a lifetime horizon. The ICER of posaconazole was $34,668/LYS compared to fluconazole. A second-order probabilistic Monte Carlo sensitivity analysis was conducted to assess the effects of parameter uncertainty, particularly concerning treatment efficacy and costs of IFIs. There was a 4% probability that posaconazole was both more effective and less costly than Fluconazole, and a 66% probability that posaconazole ICER was at or below the $50,000/LYS threshold. **CONCLUSION:** In addition to the proven efficacy, posaconazole appeared to be cost-effective relative to fluconazole in the prophylaxis of IFIs among patients undergoing allogeneic HSCT.

PIN17

DECISION ANALYTIC MODEL EVALUATING THE COST-EFFECTIVENESS OF LINEZOLID VERSUS VANCOMYCIN IN METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS COMPLICATED SKIN AND SOFT TISSUE INFECTION

Bounthavong M[1], Okamoto MP[2], Hsu D[3]
[1]Veterans Affairs San Diego Healthcare System (VASDHS), San Diego, CA, USA, [2]University of Hawaii at Hilo, College of Pharmacy, Hilo, HI, USA, [3]Western University of Health Sciences, College of Pharmacy, Pomona, CA, USA

OBJECTIVE: To evaluate the cost-effectiveness of vancomycin versus linezolid in complicated skin and soft tissue infections (cSSTIs) with methicillin-resistant Staphylococcus aureus (MRSA) using a decision analytic (DA) model. **METHODS:** A decision model was created to evaluate the cost-effectiveness of vancomycin and linezolid in the treatment of MRSA cSSTIs. Outcome probabilities were determined from published clinical trials. The main dependent variables of interest were: total direct costs, cost-effectiveness ratios (CER), and incremental cost-effectiveness ratio (ICER). Univariate (one-way) sensitivity analyses were conducted for all probabilities and costs used in the model. Second-order Monte Carlo simulation (probabilistic sensitivity analysis) using 10,000 samples was also performed to test for robustness, and an acceptability curve was plotted along a willingness to pay axis. **RESULTS:** The DA model predicted that linezolid was the most cost-effective strategy from the base-case analysis. Average CER for linezolid and vancomycin were 11,089.70 (USD/cure) and 16,299.75 (USD/cure), respectively. Univariate sensitivity analyses revealed that vancomycin IV duration and linezolid responder probability were sensitive across the range. Other parameters did not significantly change the base-case result. Probabilistic sensitivity analysis showed that a majority of the points favored linezolid being dominant over vancomycin. Acceptability curve showed a 95% probability that linezolid was the most cost-effective strategy with a willingness to pay up to 200,000 (USD)/cure. **CONCLUSION:** Based on this decision model, linezolid was the most cost-effective strategy compared to vancomycin primarily because of shorter IV duration and higher responder probability.

PIN18

THE IMPACT OF PEDIATRIC ADVERSE EVENTS ON THE COST-EFFECTIVENESS OF OSELTAMIVIR

Lavelle TA[1], Uyeki TM[2], Prosser L[1]
[1]Harvard University, Boston, MA, USA, [2]Centers for Disease Control and Prevention, Atlanta, GA, USA

OBJECTIVE: Oseltamivir has been shown to reduce the duration of influenza symptoms in children, but recent reports of neuropsychiatric adverse events deserve consideration. This study investigated the effect that these adverse events have on the estimated cost-effectiveness of oseltamivir treatment in children. **METHODS:** A decision analytic model was developed to project the costs and effectiveness of three clinical options for otherwise healthy five to eleven year old children with influenza-like illness: no antiviral treatment, rapid testing for influenza and treatment with oseltamivir if test is positive, and empirical oseltamivir treatment. The main outcome measure was the incremental cost-effectiveness ratio (ICER) of each intervention, in dollars per quality adjusted life year (QALY) gained. Deterministic and probabilistic sensitivity analyses were performed to quantify the effects of parameter uncertainty. **RESULTS:** In the base case analysis, which assumed neuropsychiatric adverse events occurred in 0.065% of treated patients, the test and treat strategy led to an ICER of $30,800 (95% CI: $12,700 to $207,700) per QALY gained, compared to no antiviral treatment. Empirical treatment was a more costly, but more effective strategy, with an ICER of $62,500 (95% CI: cost-saving to $2,138,300) per QALY gained. When the probability of neuropsychiatric adverse events was increased to 10 times the baseline estimate (0.65%), the test and treat strategy led to an ICER of $32,300/QALY, while empirical treatment was associated with an ICER of $75,000/QALY. These ratios increased to $53,300 and $410,000, respectively, when this adverse event rate was raised to 100 times its baseline value (6.5%). **CONCLUSION:** Despite recent concern surrounding the risk of neuropsychiatric adverse events, the use of oseltamivir is projected to remain a cost-effective treatment option in this pediatric population. This conclusion is robust to substantial increases in the likelihood of these events, particularly when oseltamivir is used in conjunction with rapid testing for influenza.