of patients treated with linezolid versus vancomycin were cured (69.6% versus 55.4%). Average total treatment cost was $14,268 for linezolid-treated patients versus $13,065 for vancomycin-treated patients, with an incremental ratio of $8429 per additional patient cured. Death rates were 20.4% for linezolid versus 35% for vancomycin, with an average 2.49 life-years gained per linezolid patient in a 65-year-old cohort (13.7 versus 11.2 years). The incremental cost per death avoided and per life year gained were $7299 and $482, respectively. To evaluate the robustness of findings sensitivity analyses were carried out modifying the value of several key variables. As a result of changing them suitably, the overall conclusions remained the same.

CONCLUSION: From the Argentinian perspective, linezolid is cost-effective versus vancomycin in the treatment of nosocomial pneumonia due to suspected MRSA.

ECONOMIC EVALUATION FOR THE ANTIMICROBIAL EMPIRIC TREATMENT OF HOSPITALIZED PATIENTS WITH VENTILATOR—ASSOCIATED PNEUMONIA DUE TO STAPHYLOCOCCUS AUREUS IN MEXICO

Contreras-Hernandez J, Mould J, Suarez-Nunez F, Garduno-Espinosa J
Social Security Mexican Institute, Mexico City, Mexico

OBJECTIVES: Ventilator—associated pneumonia (VAP) remains a significant cause of morbidity and mortality in Mexico. Development of VAP increases both the duration of intensive care unit (ICU) stay and hospitalization. The purpose of this study was to compare the cost—effectiveness ratios between four antimicrobial treatments for hospitalized adult patients with suspected or proven Gram-positive VAP due to Staphylococcus aureus in two ICUs of the Social Security Mexican Institute. METHODS: A decision tree model was developed using a Bayesian approach. The model simulated treatment of a hypothetical cohort of 1000 patients diagnosed with VAP during a time horizon of 12 weeks. Patients initiate treatment with one of four antimicrobial agents; linezolid, vancomycin, teicoplanin and imipenem. Conditional probabilities of the model were obtained from published clinical trials. Effectiveness measure was the clinical cure rate for patients with suspected or proven Staphylococcus aureus VAP. The analysis was conducted from the healthcare payer’s perspective (only direct medical costs were used). Resource use and costs were obtained from hospital records and Mexican official databases. Probabilistic sensitivity analyses were used. Resource use and costs were obtained from hospital records and Mexican official databases. Probabilistic sensitivity analyses were performed and acceptability and health net benefits curves were constructed. RESULTS: Linezolid was associated with a shorter ICU stay and a higher clinical cure in comparison with vancomycin, teicoplanin and imipenem (p < 0.005). Linezolid showed on the 12-weeks period the lowest expected average costs per patient treated (US$38,182.9) followed by vancomycin (US$39,343.5) and imipenem (US$42,233). Linezolid also showed the highest clinical cure rate (57.4%) followed by vancomycin (37.2%) and teicoplanin (32.1%). Results were robust to Monte Carlo first order sensitivity analysis. CONCLUSIONS: Despite its higher cost in the Mexican market, linezolid was cost—effective for treatment of VAP. These results should be taken into account by Mexican decision makers and clinicians in the management of patients with suspected or proven Gram-positive VAP due to Staphylococcus aureus.

COST EFFECTIVENESS OF TIPRANAVIR IN TREATMENT EXPERIENCED HIV PATIENTS IN THE USA

Simpson KN1, Chumney ECG1, Hicks CB1, Finneh H1
1Medical University of South Carolina, Charleston, SC, USA, 2Duke University Medical Center, Durham, NC, USA, 3Boehringer Ingelheim GmbH, Ingelheim, Germany

OBJECTIVES: The non-peptidic protease inhibitor (PI) tipranavir boosted with ritonavir (TPV/r) has shown superior efficacy compared to investigator selected ritonavir-boosted comparator PI (CPI/r) in treatment experienced HIV 1 infected patients in the RESIST 1 and 2 clinical trials. TPV/r or CPI/r were administered with an optimized background regimen (OBR). In addition to the clinical efficacy of TPV/r, healthcare decision-makers will be interested in the cost-effectiveness of TPV/r. METHODS: A previously published 3-stage Markov model was modified to reflect US practice patterns for treatment-experienced HIV patients using 2005 costs and combined 48-week RESIST 1 and 2 trial data. The 12 model health states (HS) were defined by patients’ CD4+ count and viral load, with cost and risk of AIDS defining events (ADEs) being linked to each HS. Cycle length was three months and transition through the model continued until 90% of patients had died. Disease progression beyond the 48-week trial data was based on HAART treatment experienced patients from the Medical University of South Carolina database. Costs were estimated from the payer perspective, including AWP drug prices and costs for patient monitoring and ADEs from SC Medicaid patients. RESULTS: TPV/r patients remained longer in HS defined by higher CD4+ count and lower viral load compared to CPI/r patients. This reduced the rate of ADEs (12.35% over 5 years) and resulted in 9.6 quality-adjusted life-months gained over the model time horizon. The incremental cost-effectiveness ratio (ICER) of TPV/r vs. CPI/r was $56,668 per QALY (discounted at 3%). Subgroup analysis of patients not treated with enfuvirtide as part of their OBR reduced the ICER to $49,467 per QALY. CONCLUSIONS: The ICER for TPV/r falls well within the $/QALY range of $50,000–$100,000 considered acceptable. Treating patients with TPV/r in earlier treatment regimes, not requiring augmentation with enfuvirtide, yielded an ICER below $50,000 per QALY.

THE IMPACT OF MECHANICAL VENTILATION ON OUTCOMES AND COSTS IN NOSOCOMIAL PNEUMONIA

Neslusan C1, Nuyts G2, Stellhorn R1
1Johnson and Johnson Pharmaceutical Services, L.L.C, Raritan, NJ, USA, 2Johnson and Johnson, Raritan, NJ, USA

OBJECTIVES: Nosocomial pneumonia (NP) is costly in terms of resource utilization and mortality. Patients with ventilator-associated pneumonia (VAP) have a higher risk of death than those with NP from other sources. The differences in risk and costs are attributable in part, to differences in the underlying pathogens. The purpose of this study is to characterize the outcomes and costs associated with NP, specifically examining the impact of mechanical ventilation. METHODS: We used Premier’s 2003 hospital dataset for this study. These data originate from 1500 hospitals in the United States. Records with a non-missing admission code and a diagnosis of pneumonia sometime during the stay were retained. To restrict the sample to those with NP, records with a diagnosis of pneumonia at admission as well as those with an antibiotic on day one were deleted. CPT-codes were used to identify mechanical ventilation and text strings were searched to identify antibiotic therapy. Length of stay and costs were calculated by ward type. RESULTS: The final
analytical sample contained 26,349 admissions; 762 stays involved mechanical ventilation, 9495 had ICU time, and 16,092 had neither. Hospital mortality rates were 27.7%, 23.8% and 7.6% for these three groups, respectively. Median cost per stay was substantially higher for those with ventilation ($39,493) versus those with ICU time but no ventilation ($25,798) and those with neither ($7261). Average length of stay in the ICU was 14 days and 9 days for those with and without ventilation, respectively. Average anti-infective drug costs were 1.79 times higher in the ventilator group compared with the ICU group.

CONCLUSION: VAP is an area of high unmet need. Among these 1500 hospitals, 2003 costs for those with mechanical ventilation were 1.5 times higher than a group of NP cases that were fairly complex, as indicated by some receipt of intensive care services.

**LIFETIME MEDICAL COST OF CHRONIC HEPATITIS B**

M’Kiaira K. Miring, Kafeel Billah, Cindy Weinbaum, Martin Meltzer

OBJECTIVE: To estimate lifetime medical cost of chronic hepatitis B in the United States from the societal perspective.

METHODS: A hypothetical 35-year old cohort of 100,000 individuals with chronic hepatitis B was tracked in a Markov model of the natural history of disease. The model assumed standard clinical care for disease complications, but did not include antiviral treatment. Disease outcomes modeled included cirrhosis, hepatocellular carcinoma, liver transplantation and death. Annual transition probabilities were estimated from long-term disease progression data in the literature. Outcome specific cost data were derived from published studies and the MarketScan® database. Expected lifetime medical cost was determined as the sum of weighted average medical cost of health outcomes over the cohort lifetime discounted at 3% annual rate and adjusted to 2005 U.S. dollars. Impact of variations in model parameters was assessed in one-way sensitivity analyses.

RESULTS: The expected per patient lifetime medical cost of chronic hepatitis B for the 35-year old cohort was $34,760 (range in sensitivity analyses: $9367-$59,298). About 73% of the cost was for cirrhosis, 10% for hepatocellular carcinoma and 11% for liver transplantation. The cost varied with the initial age at infection of the cohort: for a cohort aged 25 years at infection, the cost was 11% more than the cost for the 35-year olds, and for a 45-year old cohort, the cost was 16% less than the cost for the 35-year olds. The cost estimate was most sensitive to the annual rate of developing compensated cirrhosis.

CONCLUSIONS: Life-time medical cost of a chronic hepatitis B patient is substantial. Identification of the disease at early stage for antiviral treatment could reduce the likelihood of developing end-stage liver diseases and avert higher costs.

**COST OF THERAPY OF UPPER RESPIRATORY TRACT INFECTIONS IN A DEPRESSED ECONOMY**

Suleiman IA, Tayo F, Mendez U

Faculty of Pharmacy, University of Lagos, Lagos, Nigeria

OBJECTIVE: To evaluate the economic implications of upper respiratory tract infection to the Nigerian society. METHODS: It involves Cost of Illness analysis among upper respiratory tract infection Out-Patients in Lagos University Teaching Hospital. Data collected from 182 case notes include; demographics, diagnosis, diagnostic tests, no of visits, and prescribed drugs. Direct and indirect costs were included. The costs include, personnel, diagnostic tests, transport and antibacterial cost. The hospital cost of drugs and tests were used. Stop-watch time studies and monthly earnings were used to calculate the personnel costs. Average time spent at each visit and expected earnings were used to calculate the indirect costs. The current hospital costs were used for all calculations hence neither discounting nor inflation was considered.

RESULTS: Total cost of drugs = N358,790.00 ($2462.80); Average = N1971.40 ($14.10) Personnel cost = N49,156.40 ($351.12); Average = N270.00 ($1.93) Diagnostic Test cost = N9100.00 ($65.00); Average = N50.00 ($0.36) Transport cost = N36,930.00 ($263.80); Average = N202.91 ($1.45) Indirect cost = N103,350.00 ($738.21) Average = N567.86 ($4.06) Cost of illness = N557,326.40 ($3981.10) Average = N3062.23 ($21.87). Cost of drugs for each disease condition Acute Otitis media (n = 45) N24, 526.00 ($175.20); Average = N545.02 ($3.90). Chronic Suppurative Otitis media (n = 37) = N 42,982.00 ($307.01); Average = N1161.68 ($8.30) onchopneumonia (n = 70) = N257, 299.00 ($1837.85); Average = N 3675.41 ($26.25) Tonsilitis (n = 12) = N14, 923.00 ($106.60); Average = N1243.58 ($8.90). Other) = N19060.00 ($136.14); Average = N1058.94 ($7.56). Prevalence of Otitis media in Nigeria is 29.0% in children below 5 years, = 7,772,000 cases (7.7million cases) Average cost of Otitis media = N823.27 ($5.88) Cost of drugs for 7.7 million cases of otitis media alone = N6, 398,454,400.00 (Over N6.3 billion) (>450million).

CONCLUSION: Cost of therapy associated with URI is enormous. This high cost might be partly due to the use of antibiotics in most cases of URI, a good proportion of which are viral. The use of treatment guidelines is necessary to ensure a wise use of the limited resources.

**DIRECT MEDICAL COSTS OF PATIENTS WITH HIV/AIDS IN MEXICO**

Contreras-Hernandez I1, Morales-Cisneros G, Mould J1, Salinas-Escudero G2, Rely K, Garduño-Espinoza J1

1Social Security Mexican Institute, Mexico City, Mexico.
2Pharmacoeconomic Consultant, Mexico City, Mexico.

OBJECTIVES: To estimate direct medical costs associated to adult patients with HIV/AIDS in second and third level hospitals in the Social Security Mexican Institute. METHODS: Partial economic evaluation was performed employing a one-year survey to identify patients with HIV/AIDS resource use. The study revised hospital records in 8 second level hospitals and 2 third level hospitals in Mexico City throughout 2003. Resource use estimates included outpatient and inpatients services (visits to physicians or specialists, laboratory and gabinet exams, medications, emergency services, hospitalization, etc.). The research estimates total direct medical costs and average costs per patient per year. The analysis was conducted from the healthcare payer’s perspective. All costs were expressed in 2003 US$. RESULTS: A total of 1969 adult patients with HIV/AIDS were recruited with an average age of 39 ± 10 years; 86.4% were male. The evolution average time with HIV was of 6 ± 3 years. 29% of patients were in clinical stage A; 26% in clinical stage B and 45% in clinical stage C. The total direct medical cost of these patients on a 1-year follow up was US$1.107,952.58. Eighty-eight percent of this amount corresponds to antiretroviral drugs, 10% to physician’s or specialists visits and 2% to non-antiretroviral drugs and laboratory exams. A total of 9.6% of the sample required inpatient services with a mean cost per patient of US$ 3103.2. Outpatient services had an annual mean cost per patient of US$ 565.1 and the annual expected cost per patient in the Social Security Mexican Institute was estimated in US$ 5964.6. CONCLUSIONS: Economic consequences of HIV/AIDS patients are substantial for the Mexican Health Budget, especially due to antiretroviral drugs.