PIN36

COST-UTILITY OF PEGINTERFERON-ALFA-2A (40 KD) IN THE TREATMENT OF PATIENTS WITH CHRONIC HEPATITIS B WITH AND WITHOUT THE "E" ANTIGEN IN BRAZIL

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OBJECTIVES: Two billion people worldwide have been infected with hepatitis B virus and approximately 400 million present chronic disease. Part of chronically infected patients with HBV develop cirrhosis and liver failure. Two strategies are adopted for treatment of chronic hepatitis B: a) use of interferon (conventional and pegylated) for a limited timeframe and b) use of nucleoside/tide analogs for a determined period. This analysis aims to assess the Incremental cost-utility ratio for peginterferon-alfa-2a (40 KD) versus lamivudine, for treatment of HBeAg-positive and HBeAg-negative patients with hepatitis B, from the perspective of the National Health Service. **METHODS:** A Markov model was used to estimate the clinical and economic impact of the incorporation of peginterferon-alfa-2a (40 KD). Clinical stages were based on liver histology, cirrhotic decompensation, liver cancer and liver transplantation. Costs were estimated based on resource utilization described in a Delphi panel with experts. Response and seroconversion rates with peginterferon alfa-2a (40 KD) were 36% for HBeAg-negative, and 32% for HBeAg-positive patients. For lamivudine, rates were 23% and 19%, respectively. Data concerning the quality-of-life were extracted from the international literature, due to the lack of local data. A lifetime horizon was assumed. **RESULTS:** The ICER (peginterferon-alfa-2a vs. lamivudine) was R$ 20,192 HBeAg-negative patients, and R$ 33,749 for HBeAg-positive patients, assuming a discount rate of 3%. A probabilistic sensitivity analysis was conducted using second-order Monte Carlo simulation. Tested parameters were costs per stage, treatment costs, discount rate, and responsiveness to treatment. The 95% confidence interval for the ICER ranged from R$ 12,275 to R$ 35,048 for HBeAg-negative patients, and R$ 17,771 to R$ 67,430 for HBeAg-positive patients. **CONCLUSION:** The study suggests that therapy with peginterferon-alfa-2a (40 KD) has a robust and favorable cost-utility ratio in the Brazilian public health system for both serological profiles.

PIN37

COST-UTILITY OF ALFAPEGINTERFERON-2A (40 KD) IN CO-INFECTED PATIENTS IN THE PRIVATE HEALTH CARE SYSTEM IN BRAZIL

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OBJECTIVES: WHO estimates suggests that there are nearly 38,6 millions HIV/AIDS infected persons worldwide. Some epidemiological data suggests around 30% of HIV-infected patients are also infected by HCV, what would lead to 12 million patients co-infected with HIV and HCV. Recently, a multicenter, randomized controlled trial (APRICOT Torriani et al. 2004) has demonstrated the efficacy of alphapeginterferon-2a (40KD) + ribavirin (PEG + RBV) treatment and its superiority to alphainterferon-2a + ribavirin (IFN + RBV) for the treatment of chronic hepatitis C in HIV-infected patients. However, incremental cost-effectiveness ratios have not been established yet for this group of patients for the private payer perspective in Brazil. **METHODS:** A cost-utility analysis was conducted attempting to estimate costs and outcomes in long term timeframe for PEG + RBV, IFN + RBV and no specific treatment for co-infected patients. To project the disease path, a markov model based on published literature was constructed. Clinical practice and medical resource utilization was assessed by a Delphi panel with Brazilian experts. Both costs and outcomes were discounted at a 3% annual rate. Payer perspective was adopted regarding direct costs for a lifetime perspective. The model was submitted to a univariate and a probabilistic sensitivity analysis, beyond Monte Carlo second-order simulation, to evaluate uncertainties on ICER estimates. **RESULTS:** The ICER for the treatment with PEG + RBV compared with IFN + RBV was R$36,645 per QALY with a 95% confidence interval between R$22,504 to R$64,175. The ICER for the treatment with PEG + RBV compared with no specific treatment was R$28,912 per QALY and the 95% confidence interval between R$18,768 to R$50,572. **CONCLUSION:** The study results suggest that the treatment with alfapeginterferon-2a (40 KD) can be considered a cost-effective alternative, as it improves quality and quantity of life regarding other options and it offers an incremental cost-effectiveness ratio robust and acceptable for the private payer in Brazil.

INFECTION—Health Care Use & Policy Studies

PIN38

AFFORDABILITY OF ANTIMALARIAL DRUGS IN BENIN CITY, NIGERIA

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OBJECTIVES: The purpose of this study was to evaluate the affordability of Antimalarial Drugs using real world data from private pharmacies, missionary and government hospitals in Benin city, Nigeria. **METHODS:** The mean ± SD of prices that patients prescribed Antimalarials in Benin city pay for a standard regimen when they have malaria was collected from private pharmacies, missionary and government hospitals. Minimum wage was obtained directly from the least paid unskilled government workers.The data was used to develop a stochastic monte carlo model that calculates affordability of an Antimalarial drug (in days' wages). Two markov models that use 2007 data to project prices of antimalarial drugs and monthly minimum wages into the future using inflation rates, prices of antimalarials, percentage increase in wages and a fixed discount rate of 5% were also built. Results of the markov models serve as inputs for the monte carlo simulations so that affordability can thus be projected into the future for the next 10 years. All three models reported 1000 observations averaged over 10 repeated simulations. **RESULTS:** Branded Antimalarial drugs were less affordable compared to the lowest priced generic versions ($p < 0.0001$). Branded chloroquine tablets were 290% more expensive than the unbranded and the least paid unskilled government worker would need to spend about 20 days' wages to treat malaria with artemether 80 mg/ml injection. Antimalarials from missionary and government hospitals were not necessarily more affordable than those bought in private pharmacies.Peadiatric dihydroartemisinin 160 mg/80 ml may become 182% less affordable in 2012 and 226% less affordable by 2017 ($p < 0.0001$). All Antimalarials studied exhibited a similar trend. Sensitivity analyses showed that these findings were robust. **CONCLUSION:** Unless deliber-

ate public health policies address the affordability of antimalarials; it is unlikely that there will be any reduction in malaria morbidity and mortality in the poor.

PIN39

ECONOMIC EVALUATION OF A UNIVERSAL CHILDHOOD PNEUMOCOCCAL CONJUGATE VACCINATION STRATEGY IN IRELAND

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OBJECTIVES: To evaluate the cost-effectiveness of implementing a universal infant 7-valent pneumococcal conjugate vaccine (PCV7) programme in the Irish health care setting. **METHODS:** A model was constructed to follow a cohort of vaccinated and unvaccinated individuals from birth over a 10 year period. The number of life years gained (LYG) from the vaccination programme was the primary outcome. The model was constructed using MS Excel and was run in 6 monthly cycles with the exception of the first year of age, which was divided into three age bands: 0–2 months, 2–6 months and 6–12 months. Incidence data, vaccine efficacy and background mortality were based on national data and/or published evidence. A cost of illness estimate for each pneumococcal infection was determined using decision tree analysis that considered direct costs only. The reduction in events that would be associated with PCV7 vaccination and the mortality and cost resulting from these events were analysed. In a separate sub-model the effect of herd immunity was investigated where it was assumed that indirect protection would be conferred on the unvaccinated adult population for a period of one year. **RESULTS:** Implementing a PCV7 vaccination programme in Ireland in a birth cohort of 61,000 infants would be expected to prevent 7,703 cases of pneumococcal related infections over 10 years, resulting in savings of €2.05 million, increasing to €4.6 million if the effect of herd immunity is included. The baseline ICER is €98,279/LYG which reduces to €3,162/LYG when the effect of herd immunity is included. **CONCLUSION:** Universal infant pneumococcal conjugate vaccination could be considered highly cost-effective in the Irish health care setting from a health care payers perspective, if viewed in terms of the herd immunity effect. The results of this study have positive ramifications for countries in the early stages of health technology assessment.

PIN40

AN AUDIT OF HLA-B*5701 SCREENING METHODS AND COSTS IN THE UNITED KINGDOM

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OBJECTIVES: To understand the infrastructure for *HLA-B*5701* screening within the UK and establish the direct cost of correctly screening patients. **METHODS:** Presence of the *HLA-B*5701* allele is associated with predisposition for hypersensitivity to abacavir (Kivexa™, GSK). Some HIV clinicians routinely screen patients for *HLA-B*5701* prior to prescribing abacavir. The characteristics and relative costs of available screening methods are therefore integral to the impact of screening on cost-effectiveness of abacavir in practice. Yet this information is poorly understood. No definitive reference cost is available and screening is provided by many laboratory services, to varying specifications and at different cost. Obtaining robust data therefore required a creative approach. Extensive planned research with clinicians and the sales force informed the content and structure of the audit. Interviews were conducted with 25 major HIV centres (currently screening patients for *HLA-B*5701* prior to initiation of abacavir therapy), and an advisory board with expert panellists was undertaken during 2006. Methodologies used by different laboratories were explored (with laboratory personnel if necessary) to determine whether screening of sufficient resolution was provided. **RESULTS:** The audit found three regional networks of laboratories providing genetic screening services to hospitals on a local and national basis. Hospitals routinely accessed different laboratories for different clinical services. Result turnaround times varied from 5 to 14 days, although most laboratories could provide an immediate (2 hour) service if required. The cost of screening varied between 35–90 GBP. Costs were minimised in larger laboratories predominantly through using the latest technologies, batching samples, short transport distances and the use of blood sample aliquots already extracted for other tests. **CONCLUSION:** UK HIV clinicians have routine access to screening technologies for 4-digit resolution of *HLA-B*5701* that are affordable, quality assured and rapid. The impact of this information on the cost effectiveness of abacavir is the subject of ongoing research.

INFECTION—Methods and Concepts

PIN41

USE OF AN ADMINISTRATIVE DATABASE TO ESTIMATE THE ECONOMIC BURDEN OF FEBRILE NEUTROPENIA

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OBJECTIVES: To estimate from the national database of hospital admissions in 2005, the economic burden in France of febrile neutropenia (FN) associated with myelosuppressive chemotherapy. **METHODS:** In France, public and private hospital admissions are recorded in administrative databases that generate Diagnosis Related Groups (DRGs), ICD10 diagnosis and procedure codes. Admissions with FN were extracted with codes combining cancer, chemotherapy, and drug-induced neutropenia. These were then categorized into those with a principal diagnosis of FN, those in which FN prolonged length of stay, and those where planned treatments were cancelled due to FN. The costs of admissions to public hospitals were obtained from an annual study of a sample group of institutions. This study is also used to generate charges to the payer (official DRG tariffs). Costs in private clinics were estimated with the 2004 reimbursement database, to which medical fees were added. Charges to the health care system were estimated with the official 2007 DRG tariffs. **RESULTS:** In 2005, the total number of patient admissions meeting selection criteria was 38,266 i.e. 3% of all admissions for chemotherapy. Of these, 41% were due to FN, 56% were prolonged hospitalizations because of FN and 3% were procedures cancelled due to FN. In public hospitals, the mean cost per admission due to FN was €3636 (n = 13,923), mean charge was €3565. In private hospitals, this cost was €1930 per admission (n = 1517). For inpatient admissions to public hospitals alone (n = 9444), the mean cost was €5030, mean charge €4931. Total cost to the payer for public and private admissions was €54 million i.e. 3% of the total cost for chemotherapy in France. **CONCLUSION:** Administrative databases can be used to estimate the economic burden of FN, a frequent complication of chemotherapy. They could be a relevant tool for studying the potential cost savings derived from appropriate preventive use of colony-stimulating factors.