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Due to the possibility to cure the disease, treatment duration in HCV is limited to a maximum of 48 weeks. The lengths of use of direct acting agents (DAA's) are significantly different: 12 weeks with telaprevir vs. 24, 32 or 44 weeks with boceprevir. These factors make the implementation of futility rules in economic models critical. **OBJECTIVES:** To provide an insight on the proper application of the futility rules in economic evaluations of DAA's. **METHODS:** A decision tree model was developed to assess cost-efficacy for each DAA, considering 4 patient types: naïve, relapsers, partial responders, and null responders. Average acquisition costs have been estimated with and without the use of futility rules; if these rules are used, corresponding salvage treatment costs were included. The efficacy of triple therapy treatment was defined by patient type based on each DAA's summary of product characteristics. Cost per patient with sustained virological response (SVR) and the number of cured and not cured patients was calculated with a fixed budget. **RESULTS:** For a 10 million EUR investment in each patient type for either DAA, using telaprevir offers maximum cured (726 vs. 587) and minimum non-cured patients (399 vs. 517) if futility rules are not considered. If the futility rules are used, there are still maximum cured patients (759 vs. 734) and minimum non-cured patients (450 vs. 697) when telaprevir is used. We performed one-way and two-way sensitivity analyses and the overall conclusion does not change vs. boceprevir. **CONCLUSIONS:** Telaprevir offers maximum cured and minimum non-cured patients regardless of the futility rule consideration when compared to boceprevir. If stopping rules are considered in economic evaluations for the treatment of HCV, an appropriate horizon timeline should also be considered to capture future unavoidable costs of non-cured patients: salvage treatment and/or potential disease progression.

PIN44

COST-EFFECTIVENESS OF POSACONAZOLE COMPARED TO FLUCONAZOLE/ITRACONAZOLE FOR THE PREVENTION OF INVASIVE FUNGAL INFECTIONS IN NEUTROPENIC PATIENTS

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OBJECTIVES: Invasive Fungal Infections (IFIs) present a major issue in clinical practice, due to their high morbidity and mortality rates. In a pivotal multicentre, randomized clinical trial posaconazole prophylaxis prevented IFIs more effectively than did either fluconazole or itraconazole, and improved overall survival. The aim of this study was to perform an economic evaluation of the afore-mentioned therapeutic strategies for IFI prophylaxis in neutropenic patients, in the Greek health care setting. **METHODS:** A decision analytic model was developed, which described the course of neutropenic patients under posaconazole or standard azole (fluconazole or itraconazole) treatment. The effectiveness data for each treatment regimen were derived from published results of a pivotal, multicentre, randomized clinical trial. The cost and health care resources utilization data used, depict Greek clinical practice and are derived from official Greek sources. In order to obtain some of the model imputs, expert opinion from Greek Hematologists specializing in treating IFIs, was also used. **RESULTS:** Prophylaxis with Posaconazole resulted in fewer IFIs (0,05 vs. 0,11 per patient) compared to treatment with fluconazole or itraconazole, during the first 100 days from initiation of prophylaxis treatment. The cost per avoided IFI with Posaconazole was 6,455€, while the cost for every incremental life year gained (LYG) was estimated at 24,196€. Extensive sensitivity analyses (one-way and probabilistic) corroborated the base-case results. **CONCLUSIONS:** : The utilization of Posaconazole for prophylaxis of IFIs in hematology patients with neutropenia is a therapeutic strategy that provides superior clinical efficacy, while being cost-effective compared to alternative therapies.

PIN45

HEALTH ECONOMIC IMPACT OF INFANT VACCINATION PROGRAM WITH PHID-CV AND PCV13 USING NEW EFFICACY/EFFECTIVENESS DATA. EXAMPLE OF FINLAND

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OBJECTIVES: To estimate the disease burden and economic impact of the 10-valent pneumococcal non-typeable *Haemophilus influenzae* (NTHi) protein D conjugate vaccine (PHiD-CV) compared with 13-valent pneumococcal conjugate vaccine (PCV13) in Finland based on recently generated vaccine efficacy/effectiveness data. To date, vaccine efficacy of the second generation pneumococcal conjugate vaccines (PCVs) on invasive pneumococcal disease (IPD) and pneumonia has been extrapolated based on 7-valent PCV (PCV7) efficacy data and serotype distribution. Impact of PCVs on IPD and pneumonia is now observed in post-marketing settings in several countries and the effectiveness of PHiD-CV against IPD has recently been demonstrated in a clinical trial in Finland. **METHODS:** A Markov cohort model was used to estimate the clinical and cost burden of pneumococcal and NTHi-related diseases in a birth cohort over lifetime and to measure the clinical and economic impact of PHiD-CV compared with PCV13 in Finland. Age-specific incidences of IPD, pneumonia and acute otitis media (AOM) and direct medical costs were calculated and used as input data. Only the direct effect of vaccination was assessed. Outcomes were measured by reduction in disease burden, costs, quality-adjusted life-years (QALYs) and incremental cost-effectiveness ratio. **RESULTS:** The model predicts that PHiD-CV and PCV13 may have a similar impact on IPD and pneumonia in a pediatric population. PHiD-CV is estimated to prevent an additional 26,576 AOM cases and 2,502 myringotomy procedures versus PCV13 in a country with a birth cohort of 57,000 infants. This translates in an additional reduction of medical costs by EUR 8,470,547 (discounted with 3%). Cost-effectiveness analysis showed that PHiD-CV provides 135 more QALYs (discounted) while saving cost compared with PCV13. Universal infant vaccination with PHiD-CV provides more HE benefits than PCV13. **CONCLUSIONS:** Nation-wide infant vaccination with PHiD-CV in Finland is projected to improve health outcomes and be a cost-saving strategy. Funding: GlaxoSmithKline Biologicals SA.

PIN46

PHARMACOECONOMIC EVALUATION OF THE INTRODUCTION OF UNIVERSAL VARICELLA VACCINATION IN ITALY

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OBJECTIVES: Chickenpox is an infectious disease caused by the varicella-zoster virus (VZV) which is recognized as a public health problem for its high infectivity that can lead to serious complications and high costs both for society and health system. Published studies indicate that in Italy about 500,000 people are affected by varicella each year. This analysis estimates the incremental cost-effectiveness ratio (ICER) of replacing MMR vaccine by introducing MMRV vaccine in the current schedule in Italy. The higher risk of fever episodes and febrile seizures associated with MMRV compared with MMR vaccination and the conservative assumption on exogenous immunity boosting on zoster incidence were taken into account. **METHODS:** An age-structured dynamic model was used to simulate the evolution of varicella and herpes zoster, both in current schedule and with replacement of MMR by MMRV with a lifetime horizon. Two scenarios were evaluated on the basis of first and second dose of vaccination coverage: 85% and 70% for the first scenario, 70% and 50% for the second scenario. It was assumed that MMR would be completely replaced by MMRV within 5 years. **RESULTS:** For both scenarios tested at the fifth year the ICER was 13,765 and 12,911 €/QALY respectively for the first and second scenario. There were significant savings for outpatient, hospitalisation and indirect costs. Varicella cases avoided following the complete implementation of MMRV (in 5 years) were respectively 677,738 and 537,584. **CONCLUSIONS:** This analysis, that considers benefits and risks of MMRV vaccines, indicates that the implementation of MMRV would provide a benefit in terms of cases and costs avoided and is likely to be cost-effective. From the NHS perspective the ICER supports the introduction of MMRV. Benefits of vaccination increase in correspondence to high vaccination coverage.

PIN47

COST-EFFECTIVENESS ANALYSIS OF THE PRIMOVACCINATION OF NEWBORNS AGAINST TUBERCULOSIS IN SLOVAKIA

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OBJECTIVES: To analyze the cost-effectiveness of mass primovaccination of newborns in the Slovak Republic with BCG vaccine against tuberculosis compared to the cost-effectiveness of selective primovaccination of specific groups, as well as to there being no vaccination at all. **METHODS:** To compare cost-effectiveness, methods were chosen as to determine direct cost of illness and minimization of costs from the perspective of health insurance companies. Additionally, the closely related parameter of direct costs needed to prevent one case of active tuberculosis in children aged 0 to 14 years was analyzed. The own adapted model was used. **RESULTS:** Data used were obtained from the Public Health Authority of the Slovak Republic, National Tuberculosis Registry, State Institute for Drug Control, Statistical Office of the Slovak Republic, Ministry of Health, and from Health Insurance Companies. We assumed that the vaccine will have a 15-year effect, at an average effectiveness of 63.3% in preventing active tuberculosis. The costs for preventing one case of active tuberculosis in children aged 0 to 14 years would be € 794.69 lower if mass vaccination of newborns is applied than if all vaccination was to be discontinued. For selective vaccination of newborns, the cost of preventing one case of active tuberculosis in children aged 0 to 14 years would be € 440.02 lower than if all vaccination were to be discontinued. Finally, mass vaccination of newborns results in the cost of preventing one case of active tuberculosis in children aged 0 to 14 years being € 1 731.75 lower than for selective vaccination. **CONCLUSIONS:** The most advantageous strategy for the state would be to implement mass vaccination of newborns against tuberculosis. A shift to selective vaccination would only be beneficial if the costs for treatment of tuberculosis were to decrease dramatically. The least useful strategy would be to discontinue vaccination.

PIN48

COST-EFFECTIVENESS ANALYSIS OF DARUNAVIR VERSUS ATAZANAVIR, EACH IN COMBINATION WITH EMTRICITABINE AND TENOFOVIR, FOR THE MANAGEMENT OF NAIVE ANTI-RETROVIRAL HIV INFECTED PATIENTS, UNDER THE BELGIAN SOCIAL SECURITY PERSPECTIVE

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OBJECTIVES: Although not directly compared, both Atazanavir and Darunavir are possible options for the treatment of naive HIV-infected patients, as the third agent (Ritonavir-boosted protease-inhibitor), to be used together with two nucleoside-analogue, reverse-transcriptase inhibitors. The objective of this study was to evaluate the incremental cost-effectiveness ratio (ICER) of Darunavir compared to Atazanavir in naive HIV-infected patients, according to the Belgian third party payer perspective. **METHODS:** A cost-effectiveness model was developed to com-