COST-EFFECTIVENESS OF PAEDIATRIC PNEUMOCOCCAL VACCINATION IN THE NETHERLANDS; AN UPDATE FOR THE 7-VALENT AND FORECAST FOR THE 10-AND 13-VALENT PNEUMOCOCCAL CONJUGATED VACCINES (PCVs)

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OBJECTIVES: The objectives of the current analysis are: 1) to update cost-effectiveness estimates for the current 4-dose schedule of 7-valent pneumococcal conjugate vaccine (PCV7) using recent 2008 epidemiological data and new data obtained from recent resource use for pneumococcal disease; 2) to investigate the cost-effectiveness of a reduced-dose schedule, and switching to 10- or 13-valent pneumococcal vaccines.

METHODS: We constructed a decision analysis model to compare the expected net costs and health benefits in two hypothetical cohorts of 180,000 children—one vaccinated (with the PCV7/PCV10/PCV13) and one unvaccinated. Both herd protection and serotype replacement were included for the cohorts, no net-vaccine benefits for adults and elderly were included. RESULTS: Under base-case assumptions vaccination with 4-doses of PCV7 prevents 72 cases of invasive pneumococcal disease and 6,801 cases of respiratory infections corresponding to a gain of 173 discounted life-years or a gain of 270 QALYs. The cost savings due to vaccination is estimated at €27.2 million annually. With a vaccine price of €50, the cost-effectiveness ratio is estimated €116,847/QALY or €182,002/LYG. Using a 3-dose schedule lowers the CER to €85,104/QALY gained. At a threshold of €219.76 or €240.64 for the PCV10 and PCV13, respectively. Costs savings is reached below €203.28 or €210.88. CONCLUSIONS: Current routine vaccination with four doses of PCV7 exhibits relatively high cost-effectiveness ratios due to present rapid increase of non-vaccine serotype disease in vaccinated children and increasing incidence in unvaccinated individuals. Cost-effectiveness can be improved using reduced dose schedules. In the presence of pneumococcal vaccination, switching to the PCV10 or PCV13 seems health economically justified at limited price increases.

HEALTH ECONOMIC EVALUATION OF A NEW VACCINE FOR THE PREVENTION OF HERPES ZOSTER AND POST-HERPETIC NEURALGIA IN ADULTS: A GERMAN ANALYSIS

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OBJECTIVES: Herpes zoster (HZ) is a common health problem causing significant pain and morbidity especially in the older population. A new vaccine preventing HZ and its main complication, post-herpetic neuralgia (PHN) has demonstrated its efficacy in reducing the incidence, severity and duration of the HZ pain. The objective of this study was to evaluate the cost-effectiveness of a vaccination policy against HZ and PHN in the population aged 60 and above.

METHODS: An existing European core Markov model was adapted to assess the lifetime clinical and economic impact of an HZ vaccination policy compared to the current situation of no vaccination policy in Germany. As outcome parameters, costs per QALY, costs per HZ and PHN case avoided are considered. Transition probabilities between the various health states and effectiveness data are derived from published literature and adapted to Germany where necessary. Epidemiological and cost data (reference year 2008) are calculated where necessary. Epidemiological and cost data (reference year 2008) are calculated where necessary. Probabilistic sensitivity analyses were performed. RESULTS: From the third party payer perspective, EICRs of the vaccination programme against HZ and PHN were €20,139 per QALY gained, €1,653 per HZ case avoided, and €51,489 per PHN case avoided. The number needed to vaccinate (NNV) to avoid one case of HZ and PHN is 12 and 86, respectively. Deterministic sensitivity analyses show that results are inter alia sensitive to the duration of vaccine protection, incidence of HZ and PHN and discount rates. Probabilistic sensitivity analyses confirm the cost-effectiveness of the vaccination policy. CONCLUSIONS: Implementing an HZ vaccination policy in the German population aged 60 years and above seems to be cost-effective and offers substantial health benefits by avoiding HZ and PHN cases at reasonable costs.

ECONOMIC EVALUATION OF ATOSIBAN COMPARED TO BETAMIMETICS FOR THE TREATMENT OF PRETERM LABOUR IN AUSTRIA

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OBJECTIVES: We aimed to determine the cost-effectiveness of atosiban compared to betamimetics in the treatment of preterm labour in Austria. METHODS: A systematic literature review identified RCTs comparing atosiban to betamimetics in the first 48 hours of hospitalisation. In Austria hexoprenaline is the most common betamimetic indicated for preterm labour, previous research had demonstrated comparable safety profiles within this group. Cost-minimisation analysis was conducted using Excel model of the combined ITT population. Drug dosing was based on clinical trial protocols and Austrian treatment guidelines. Costs of drugs were obtained for 2009. The Hospital Financing System (IKF) score was calculated using the 2009 Kdok software. Analyses were conducted from the payer (KRAZAF) and hospital (KAV) perspectives. RESULTS: Six RCTs were identified: three double-blinded, one single-blinded, and two open label studies. Meta-analysis of the double-blinded studies showed, that atosiban and betamimetics had similar efficacy (RR = 0.99, 95% CI: 0.94–1.04, p = 0.7721 in preventing preterm labour for 48 hours. Atosiban was associated with a significantly lower frequency of adverse events for tachycardia, palpitation, vomiting, headache, hypglycemia, tremor, dyspnoea, chest pain, hypoaemia and feotal tachycardia (p < 0.05). From the public payer perspective, the cost saving from choosing atosiban over hexoprenaline was €323 per patient. From the hospital perspective, savings ranged from €807 to 18 hours for tocodynam for 6721 for 48 hours. The results were consistent when the double-blinded clinical trials were analysed separately or combined with the single-blinded and open label trials, and were robust in the probabilistic sensitivity analyses where the CER was between €270 and 1,042. CONCLUSIONS: Atosiban is cost saving versus betamimetics in the treatment of preterm labour in Austria from both the payer and hospital perspectives. Cost savings result from the superior safety profile of atosiban.

CHANGING THE SURGICAL WOUND CLOSURE MANAGEMENT PATHWAY: TIME AND SUPPLIES WITH PRINEO® VS. STANDARD OF CARE FOR BREAST RECONSTRUCTION SURGERY

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OBJECTIVES: PRINEO® is a safe and effective alternative to standard of care (SOC) suture techniques for wound closure. This study evaluates differences in time and supplies attributable to PRINEO® vs. SOC for breast reconstruction in Germany (GER) and The Netherlands (NL). METHODS: A time and motion study was conducted in one centre per country with data recorded on Data Observation Forms by trained centre staff. In NL, 5 procedures per group were observed involving both donor and breast site (DEAF flag). In GER, 7 SOC and 8 PRINEO® procedures were observed involving mostly one site (Latissimus Dorsi). Activities were observed for which differences in time and supplies between PRINEO® and SOC were expected: incision closure, dressing application, and dressing changes. Analyses were conducted for donor and breast combined. RESULTS: In NL, average skin layer closure time was 3.19 min for PRINEO® vs. 3.64 min for SOC and speed of closure was higher for PRINEO® (31.89 vs. 2.68 cm/min). Including dermal layer closure, total average wound closure time was 46.57 min for PRINEO® vs. 68.51 min for SOC, which required on average 6.26 min for dressing application and post-op dressing changes compared to 3.36 min for PRINEO® removal. In GER, average skin layer closure time was 2.98 min for PRINEO® vs. 6.91 min and speed of closure was increased for PRINEO® (12.37 vs. 4.03 cm/min). Including dermal layer closure, total average time for wound closure was similar (23.32 min vs. 21.73 min). SOC required on average standard 13.25 min for dressing application and post-op dressing changes compared to 1.10 min for PRINEO® removal. Additionally, average use of 1.13 PRINEO® units (GER) and 2.00 (NL) resulted in elimination of suture closure materials. CONCLUSIONS: PRINEO® lead to increased skin closure speed and avoided time and supplies associated with dressing application and changes, at the expense of an average at least 1 PRINEO® unit for donor and breast site combined.

TIME AND SUPPLIES FOR WOUND MANAGEMENT DURING AND AFTER BREAST REDUCTION SURGERY IN GERMANY AND THE NETHERLANDS: PRINEO® VS STANDARD OF CARE

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OBJECTIVES: PRINEO® Skin Closure System (PRINEO®) offers effective and safe wound closure compared to Standard of Care (SOC). This study evaluated health resource utilization attributable to PRINEO® vs. SOC for breast reduction in Germany and the Netherlands. METHODS: A time and motion study was conducted in one centre per country. Trained centre staff collected 10 observations in patients who...
underwent breast reduction (5 PRINEO® and 5 SOC). Data were collected for surgery through post-op care. Data Observation Forms were designed based on information obtained from staff interviews. Activities were observed for which differences in time and supplies between PRINEO® and SOC were expected: incision closure, dressing application, and dressing changes. RESULTS: A cross-sectional study was conducted using North Carolina Medicaid claims January 2003 to December 2007 of women ages 21-44 years old who had undergone breast reduction surgery. The Current Procedural Terminology codes used were 20.39 and 20.49. A total of 1812 patients prescribed VE (mean age 49.4 ± 10.5 years, 22% black) having 1 year follow-up and 1013 patients having 2 years follow-up. 94.6% received cream; 10.4% tablets. Initial prescription refill rate was 48.7% for tablets, 33.7% for cream (p < 0.001). Average treatment duration among women with a refill and a refill follow-up was longer for tablets than cream (291.7 ± 214.3 days vs 281.8 ± 226.3 days; p = 0.745). Tablet users were significantly more likely to refill their initial prescription (OR 1.88, 95% CI = 1.38–2.56). OLS regression results showed significant differences in treatment duration for tablets vs. cream (β = 0.17, 95% CI = 0.01–0.33, p < 0.05). CONCLUSIONS: Findings of this study suggest that treatment duration for women undergoing breast reduction surgery may be influenced by the form of treatment prescribed. The results of this study also suggest that the Data Observation Forms may be a tool to assess the impact of treatment duration on clinical outcomes. The study also highlights the importance of understanding the potential impact of treatment duration on patient-reported outcomes and clinical outcomes.