**PIN24**

**ADDING A QUADRIVALENT (6, 11, 16 & 18 TYPES) HUMAN PAPILLOMAVIRUS VACCINE TO THE EXISTING UK CERVICAL SCREENING PROGRAMME IS POTENTIALLY COST-EFFECTIVE**

Shalini Kulasingam, PhD; Stève Bénard, Pharm.D; Ruanne Barnabas, MD, MSc; Evan Myers, MD, MPH

1Duke University, Durham, USA; 2Sanofi Pasteur MSD, Lyon, France; 3Cancer Research UK, Oxford, UK

OBJECTIVES: A vaccine to prevent infection with human papillomavirus (HPV) types 6, 11, 16 and 18 may soon become available. The current strategy to prevent cervical cancer in the UK is screening every 3 years, beginning at age 25 and then every 5 years for women aged 50+. The current screening coverage rate is 81.2%. The objectives are to assess the health and economic impact of HPV vaccination in association with current screening in the UK compared to screening alone. METHODS: A Markov model of the natural history of HPV infection incorporating screening and vaccination was developed for the UK. A vaccine that would prevent 90% of HPV 6, 11, 16 and 18-associated disease, with 20 years duration and 87% coverage, given to girls at age 12 in conjunction with current screening was compared to screening alone using cost per life-year (LY) and quality-adjusted life-year (QALY). Sensitivity analyses included varying the vaccination cost from £165 to £220 and assuming a lifetime duration for vaccine efficacy. RESULTS: The model predicts the reduction in lifetime risk of cervical cancer attributable to screening in line with already published UK data. Introduction of vaccination, and maintaining the screening programme unchanged, would be expected to reduce the lifetime risk to 0.66%. Vaccination with current screening is associated with an incremental cost-effectiveness ratio (ICER) that varies from £16,000/QALY (£20,600/LY) to £22,000/QALY (£28,200/LY) compared to screening alone. CONCLUSION: Vaccinating hemodialysis patients with StaphVax is a highly cost-effective measure to prevent serious morbidity and mortality in this patient population at substantial risk of bacterial contamination.

---

**PIN25**

**PRELIMINARY COST-EFFECTIVENESS ANALYSIS OF A POTENTIAL PROPHYLACTIC STAPHYLOCOCCUS AUREUS VACCINE (STAPHVAX) IN HEMODIALYSIS PATIENTS IN GERMANY**

Staphinunus U1, Russell S2

1Premor Associates, New York, NY, USA; 2Premor Associates, Madrid, Spain

OBJECTIVE: Increasing antibiotic resistant staphylococcus aureus strains in hospital- and chronic disease patients causing a high burden of illness and consume enormous health care resources in Germany. A new vaccine (StapVax) preventing S.aureus infections is in clinical development and currently seeking market authorization in the EU. The objective of this analysis is to project the potential economic value of vaccinating hemodialysis patients with StapVax against mecillin resistant staphylococcus aureus infections. METHODS: A literature-based decision analysis model was developed to assess the annual number of potential infections and death avoided as well as to calculate cost-effectiveness, break-even price and budget impact of the candidate vaccine. Baseline efficacy rate was assumed to be 57% with a 90% coverage rate. The model compared projected cost per infection avoided and cost per life-year gained for patients receiving the vaccine versus unvaccinated patients undergoing hemodialysis. RESULTS: Vaccinating the about 60,000 hemodialysis patients in Germany could prevent 650 S.aureus infections and 105 associated deaths per year. Assuming annual per patient vaccination cost of €500 (vaccine plus administration) the cost per infection avoided was estimated at €27,000, with a cost per life-year gained of €17,000, respectively. The net-budget impact in this scenario results in about €18 million. Vaccination cost of €170 would make the vaccine a budget neutral preventive strategy. Monte Carlo simulations on vaccine efficacy, mortality rate after S.aureus infection, treatment and vaccination cost resulted in cost per life-year gained ranging from €3000 to €22,000 in 95% of the runs, and from €7000 to €14,000 in 50% of trial runs. The model is most sensitive to vaccine program cost and predicted preventive efficacy. CONCLUSION: Vaccinating hemodialysis patients with StaphVax is a highly cost-effective measure to prevent serious morbidity and mortality in this patient population at substantial risk of bacterial contamination.
OBJECTIVE: There are no pharmacoeconomic studies perform to date comparing voriconazole and liposomal Amphotericin B (LAB) for the treatment of systemic fungal infections. The aim of this study was to perform an economic evaluation of voriconazole versus LAB for the treatment of invasive aspergillosis and candidiasis. METHODS: A cost-minimization analysis was performed from the hospital perspective in 2005, as the same efficacy was assumed. A systematic review of available literature was performed between 1996 and 2005, in order to obtain the efficacy and incidence of drug-related adverse events (AE) for each treatment group. Duration of treatment (intravenous: 15.42 days; oral: 4.49 days; the same for both treatments) and mean weight of patients (68.6 Kg) were obtained from a local study: The Fungcost study (Peiro S. Value Health 2002;5:564). Only direct costs per episode were considered; medications (iv and oral) at their hospital selling prices; the cost of monitoring AE; and administration costs (obtained from a national cost database). Voriconazole was the oral treatment in both groups. The most important AE for each treatment (and the way to monitor them) were: hepatotoxicity with voriconazole –13.97%—(two chemistries and hematologic tests during the treatment period); and nefrotoxicity with LAB –12.84%—(a daily creatinine clearance measurement). Mean cost per episode and incremental cost were calculated. RESULTS: Mean cost per episode was €6073.43 (iv treatment 94.22%) for voriconazole, and €8794.33 (iv: 95.78%) for LAB in the treatment of invasive aspergillosis, with an incremental cost of €2486.90 (28.28%). The treatment of candidiasis showed a mean cost of €8779.92 (95.93%), respectively, with an incremental cost of €2472.48 (28.16%). Results were robust to the sensitivity analysis measurement. CONCLUSION: Using costs and treatment patterns of fungal infections in Spain, voriconazole is more cost-effective than LAB for the treatment of invasive candidiasis and aspergillosis.

RESOURCES USE AND COSTS ASSOCIATED WITH THE MANAGEMENT OF PAP III, PAP IIID AND PAP IV IN THE PRE-HPV VACCINE ERA IN GERMANY

Petry KJ1, Hillemanns P1, Germé M1, Littlewood KJ2, Benard S3, Breugelmans JG4

1Frauenklinik im Klinikum der Stadt Wolfsburg, Wolfsburg, Germany; 2Klinik für Frauenheilkunde und Geburtshilfe Friedrich-Schiller Universität Jena, Jena, Germany; 3Mapi Values, Houten, The Netherlands; 4Sanofi Pasteur MSD, Lyon, France

OBJECTIVE: Human Papillomavirus (HPV) is the main cause of genital warts (GWs) and a necessary cause of cervical cancer (CC). There is a lifetime HPV infection risk in women of 55–75%. Genitourinary Medicine (GUM) clinics and CC screening programmes help in the detection and treatment of GWs and deceleration of progression to cancerous lesions. This study estimated the annual National Health Service (NHS) costs of diagnosing and managing HPV related diseases in a pre-HPV vaccine era. METHODS: Data for first and recurrent GWs episodes were obtained from the Health Protection Agency and management pathways from GUM clinicians. The number of women screened for CC, results, and procedures undertaken for abnormal findings were obtained from a variety of sources (e.g., Government Statistical Service, Regional Screening Programmes; adjusted to 2003). Annual new cases of CC were obtained from GLOBOCAN, 2002. Resource costs (2003) included screening tests, clinician visits, diagnostic and treatment procedures, hospital admissions and drugs. Sensitivity analyses examined the range of treatment patterns and costs. RESULTS: In 2003, GUM clinics treated almost 114,000 patients with GWs. Topical creams were the first line treatment for the majority (77%) followed by cryotherapy or combination of the two. An average 26% of patients returned to complete their treatment. Total annual costs for GWs were £22.4 million. In 2003, 4.8 million CC screening tests were conducted at a cost of £104.5 million. Over 227,209 women were referred for colposcopy, costing £34 million for the diagnosis and treatment of precancerous lesions. Newly identified CC cases (N = 3308) and hospital admissions for prevalent CC cases in 2003 cost £43.7 million. Estimated total 2003 NHS costs related to HPV were £204.6 million (range: £181.3–£209.7 million). CONCLUSION: Preventing HPV related diseases through vaccination with a quadrivalent vaccine could result in cost offsets and more efficient resource allocation.

INCIDENCE, PREVALENCE AND COSTS OF TREATING GENITAL WARTS IN THE PRE-HPV VACCINE ERA IN GERMANY, 2005

Giseling E1, Petry KU1, Hillemanns P1, Germé M1, Littlewood KJ2, Bénard S3, Breugelmans JG4

1Universitätsklinikum Hamburg, Hamburg, Germany; 2Frauenklinik im Klinikum der Stadt Wolfsburg, Wolfsburg, Germany; 3Klinik für Frauenheilkunde und Geburtshilfe Friedrich-Schiller Universität Jena, Jena, Germany; 4Mapi Values, Houten, The Netherlands; 5Sanofi Pasteur MSD, Lyon, France

OBJECTIVES: Human Papillomavirus (HPV) infections, including genital warts (GW), are common. Current treatments are not