PMD83

COST-EFFECTIVENESS OF PEN DEVICES FOR NPH INSULIN ADMINISTRATION COMPARED WITH SYRINGE AND VIAL IN ADULT PATIENTS WITH DIABETES MELLITUS IN COLOMBIA

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OBJECTIVES: Although self-administration "pen" devices offer certain advantages, their higher cost has prevented its wider dissemination in patients with diabetes. The aim of this study was to determine their cost-effectiveness, compared to conventional vial and syringe, in adult patients in Colombia. **METHODS:** We designed a cost-effectiveness Markov model, with annual cycles, five-year time horizon (with analysis at 3 and 10 years), 5% discount rate, and third party payer perspective (Colombian health system). Transition probabilities and utilities in quality adjusted life years (QALY) were obtained from a systematic review of the literature. Costs, in 2014 Colombian pesos (1 euro = 2,660 COP), were obtained locally from different sources (following the methodology proposed by IETS, the Colombian HTA agency). Cost-effectiveness threshold was three times per capita GDP (equivalent to € 17,547 per QALY). **RESULTS:** The total cost of treating a patient with a syringe and vial over five years would be € 1,002, while the use of pen device would represent € 1,226. In the same period, the patient would gain 3.1709 and 3.1849 QALY, respectively, representing an incremental cost effectiveness ratio (ICER) of € 15,302 per additional QALY gained. By extending the time horizon, the ICER lowers (€ 10,424 in 10 years). Different discount rates, from 0 to 12%, do not substantially alter the results. With a price reduction of 31% the pen device reaches the threshold of 1 per capita GDP. In the sensitivity analysis, the variables related to hypoglycemia (frequency and costs of treatment) are the ones that most modify the results. Cost-effectiveness, however, is maintained under different scenarios. **CONCLUSIONS:** Given the assumptions and limitations of this model, the pen-like devices for self-administration of insulin are cost-effective, compared with administration by vial and disposable syringes, in adult patients with diabetes in the Colombian context.

PMD84

COST-EFFECTIVENESS OF TRANSCATHETER AORTIC VALVE REPLACEMENT: CURRENT DECISION-ANALYTIC MODELS AND FUTURE OPPORTUNITIES

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OBJECTIVES: Transcatheter aortic valve replacement (TAVR) is an important new therapy approach for the treatment of severe aortic stenosis. Our objective was to identify and review the growing body of published cost-effectiveness analyses of TAVR, and to identify opportunities for future modeling and analyses in light of new clinical evidence. **METHODS:** A systematic search in PubMed, Embase, and HTA agency databases and a grey search were conducted for the period from 2005 through 2014 to identify studies examining the cost-effectiveness of aortic valve replacement using a transcatheter-based intervention. Searches, study selection, and data extraction were performed according to a predefined protocol. We only included studies on cost-effectiveness of TAVR compared with either medical management (MM) or surgery (SAVR). Appraised studies were analyzed using the CHEERS checklist. **RESULTS:** Our search yielded n=15 studies, comprising 13 distinct decision-analytic models set in six countries: Belgium, Brazil, Canada, Spain, United Kingdom, and U.S.A. Four of the models were developed by national HTA agencies or academic groups. In some cases, HTA reports differed from the published results. Study quality per CHEERs criteria was poor to excellent. n=7 models compared TAVR to medical management, two to surgery, and n=5 evaluated the cost-effectiveness of TAVR in comparison to both. n=13 studies utilized efficacy data from PARTNER A and B. Only one study used patient-level data in an "along-the-trial" design. ICER in studies comparing TAVR to MM ranged from £12,600 to US$115,600 per QALYs. Compared with SAVR, ICER estimates ranged from TAVR dominating to being dominated. **CONCLUSIONS:** Economic evaluations are lagging behind published clinical evidence. Future opportunities include economic evaluation of newer clinical trial data, long-term follow-up data from earlier studies, and more explicit evaluation of subsets of patient cohorts. Overall model quality and reporting of methods including data sources could be improved further.

PMD85

COST-UTILITY ANALYSIS OF SACRAL NERVE STIMULATION FOR THE TREATMENT OF FECAL INCONTINENCE REFRACTORY TO CONSERVATIVE TREATMENT: LOOKING FOR OPTIMAL TREATMENT PATH

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OBJECTIVES: To evaluate the cost-utility of including sacral nerve stimulation (SNS) in different treatment pathways for refractory fecal incontinence (FI). **METHODS:** The treatment pathways of two populations, with a surgically repairable sphincter defect (SD) and without (WSD), were modeled through a patient-level simulation model. Three comparators to SNS were included: sphincter repair (SR), NASHA/Dx and percutaneous tibial nerve stimulation. Colostomy or conservative treatment were modeled as last resort. Clinical data were based on a systematic literature review and expert opinion (EO). Resource use was based on EO, whilst cost data were based on hospital costs and national tariff lists (GBP 2015-16). The UK NHS perspective (threshold: 30,000 GBP/QALY) and a lifetime horizon were adopted. **RESULTS:** For SD patients, the most effective treatment pathway was SNS followed by SR, however it was not cost-effective vs SR followed by SNS (ICUR = 44,562 GBP/QALY). Adding SNS after or before SR was cost-effective vs SR only. In case of SNS used after SR the gain in QALY was equal to 0.48, with ICUR equal to 5,607 GBP/QALY. Adding SNS before SR corresponded to a QALY gain of 0.62, with ICUR 14,357 GBP/QALY. The most cost-effective treatment pathway for WSD patients was NASHA/Dx followed by SNS, with a maximum ICUR of 5,928 GBP/QALY vs the other treatment pathways analysed. In comparison with treatment pathway excluding SNS, 0.55 QALY are gained. **CONCLUSIONS:** SNS is a relevant treatment for FI in patients who have failed conservative management. Including SNS into the treatment pathway for refractory FI may provide value-for-money in the UK NHS perspective.

PMD86

EARLY ECONOMIC EVALUATION OF SHORT-TERM VARIABILITY OF QT INTERVALS AS A POTENTIAL TEST FOR PREDICTING THE EFFECTIVENESS OF ICD IMPLANTATION IN PATIENTS WITH HEART FAILURE

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OBJECTIVES: Implantable cardioverter-defibrillators (ICD) improve survival in heart failure patients with New York Heart Association Functional Classification (NYHA) class III/IV symptoms and a left ventricular ejection fraction (LVEF) of ≤35%. Therefore, the current clinical guidelines recommend the implantation of the ICD in all the patients that fulfill the above conditions. However, as the costs of the ICD devices are relatively high, the prophylactic implantation of ICDs as per the guideline is not particularly cost-effective. A previous study demonstrated that short-term variability of QT (STVQT) may in fact reflect the increased susceptibility to SCD in patients with DC since it was shown that patients with DC and HF had the highest STVQT. The objective of this study was to explore the cost–effectiveness of short-term variability of QT (STVQT) as a biomarker for implanting ICDs as secondary prevention of SCDs in heart failure patients and assess the societal value (headroom) of a hypothetical perfect STVQT biomarker for risk assessment and subsequent treatment decision in implanting ICDs . **METHODS:** The study uses a decision analytical model. **RESULTS:** The use of the QT (STVQT) as a biomarker for implanting ICDs as secondary prevention of SCDs in heart failure patients is a cost-effective healthcare intervention. The headroom (societal willingness to pay multiplied by incremental quality-adjusted life years) available for the hypothetical perfect biomarker ranged from €483 to €3,868. **CONCLUSIONS:** The use of the QT (STVQT) as a biomarker for implanting ICDs is cost effective. Identification of patients with high-risk for SCD and implantation of ICDs only on those patients could potentially save substantial costs. However, further research of risk stratifying biomarkers test accuracy is needed to support and strengthen the results of this modeling study.

PMD87

A COST-EFFECTIVENESS MODEL EVALUATING COMPONENT-RESOLVED DIAGNOSIS (CRD) VERSUS STANDARD TESTING METHOD (SKIN PRICK TESTING (SPT)) IN THE DIAGNOSIS AND TREATMENT OF ALLERGIC RHINITIS IN THE NETHERLANDS

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OBJECTIVES: A curative treatment for patients with Allergic Rhinitis (AR) is immunotherapy (IT). However, not all patients are susceptible for IT, and many patients currently receive this treatment without any effect. Component Resolved Diagnosis (CRD) is a technique that might help identifying susceptible patients for IT. This study aimed to evaluate the impact of diagnosing patients with AR with CRD on treatment prescription, costs and (health) outcomes compared to diagnosing patients with standard testing (Skin Prick Testing (SPT)) in the Netherlands. **METHODS:** A literature search and interviews with experts were performed to structure a decision tree and to determine relevant parameters for the analysis. Parameter values were based on literature data; costs were retrieved from national databases. Primary outcomes were the incremental cost per additional full responder and the incremental cost per Quality Adjusted Life Year (QALY) over a time horizon of nine years. **RESULTS:** Diagnosis through CRD increased the number of full responders to IT compared to diagnosing patients with SPT (13,239 [95%CI; 10,039 – 16,868] vs 9,422 [95%CI; 7,384 – 11,891]). QALYs also increased more for patients on IT based on CRD compared to patients diagnosed with SPT (0.02734 [95%CI; -0.0216 – 0.0338] vs 0.02362 [95%CI; 0.0201 – 0.0276]). Expected total costs per patient reduced when diagnosis took place with CRD, from €7,555 [95%CI; €7,496 – €7,618] to €7,255 [95%CI; €7,062 – 7,453]. The incremental cost per additional full responder and the incremental cost per Quality Adjusted Life Year (QALY) were €-12,773 and €-80,667 respectively. The PSA showed that in 96.4% of the 10,000 simulations CRD was dominant in both costs and additional full responders, and in 84.8% in both costs and additional QALYs. **CONCLUSIONS:** Using CRD in the diagnosis of patients with suspected AR seems to be both cost saving as improving treatment decisions and health outcomes.

PMD88

EARLY ECONOMIC EVALUATION OF A HYPOTHETICAL PERFECT TEST FOR PREDICTING THE EFFECTIVENESS OF IMPLANTABLE PACEMAKER-DEFIBRILLATOR DEVICES (CRT-D) IN PATIENTS WITH HEART FAILURE

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OBJECTIVES: Cardiac resynchronization therapy (CRT) either via a pacing device (CRT-P) or a pacemaker-defibrillator device (CRT-D) is considered an effective treatment for patients with congestive heart failure (CHF) and disturbances in heart rhythm (arrhythmias) having New York Heart Association (NYHA) class II, III and IV symptoms. However, due to the large numbers of patients, which do not get additional benefits from CRT-D, and also due to large costs of implementation and