COST-EFFECTIVENESS ANALYSIS OF DALTEPARIN IN PROLONGED PROPHYLAXIS AGAINST DEEP VEIN THROMBOSIS AFTER HIP ARTHROPLASTY
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OBJECTIVES: Prophylactic dalteparin reduces the incidence of deep venous thrombosis (DVT) after hip replacement. The aim of this analysis is to perform a pharmacoeconomic evaluation of prolonged (35 day) versus short (7 day) prophylaxis with dalteparin for this indication. METHODS: A cost-effectiveness analysis was carried out by building a decision analytic model. Effectiveness data were taken from a meta-analysis of all clinical trials (CT) of dalteparin in prolonged prophylaxis after hip replacement. After pooling and analyzing all CT found, the incidence of DVT was 6.1% with a prolonged prophylaxis and 15.1% when using a short prophylaxis. Health care resources utilization with dalteparin was taken from the aforementioned meta-analysis and a local expert panel. Only direct medical costs were included in the model (drug acquisition, length of hospital stay, diagnostic procedures and treatment of DVT cases). Drug acquisition cost data were obtained from official sources while the rest of the data were taken from a national health care cost database. The perspective selected for this analysis was the National Health Service and the time horizon chosen was 35 days, being the maximum time that patients received dalteparin as prophylaxis.

RESULTS: In two hypothetical cohorts of 500 patients, 424 patients reported no DVT cases in the prolonged prophylaxis group resulting in a cost/patient free of DVT of €370 whilst 469 patients in the short prophylaxis group reported no DVT thereby giving a cost/patient free of DVT of €611. CONCLUSION: This pharmacoeconomic analysis demonstrates that prolonged prophylaxis with dalteparin is a more efficient alternative than short prophylaxis, as it presents better clinical results with lower associated costs and a lower cost/effectiveness ratio.

HEALTH SYSTEM COSTS OF OUT-OF-HOSPITAL CARDIAC ARREST IN RELATION TO TIME TO SHOCK
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OBJECTIVES: Widespread use of automated external defibrillators by policemen and fire fighters in the Netherlands may shorten the time to shock in out-of-hospital cardiac arrest (OHCA). This study assessed the average health care costs per life saved and the incremental cost-effectiveness ratios for three different reduced time to shock’s scenarios. METHODS: Between January 2000 and January 2002 all consecutive patients in witnessed OHCA in Amsterdam, with ventricular fibrillation as initial rhythm, identified by the dispatch center, were included. Each patient’s time to shock was estimated and assigned to one of three categories: <7 minutes (early), 7–12 minutes (intermediate), and >12 minutes (late). Clinical data and health care costs were prospectively collected at patient level for the first half-year after collapse. RESULTS: A total of 308 patients were included. Six-month survival was 22%. The mean pre-, in-, and post-hospital costs were €559, €6,870, and €666, respectively. On average, €28,636 were spent per survivor and €2,384 per non-survivor. Among patients shocked early (N = 24), 46% survived, averaging €20,253, whereas 54% died, averaging €2,836. Of the intermediate group (N = 149) 26% survived, averaging €31,467, and 74% died, averaging €2,884. Among patients shocked late (N = 135), 13% survived, averaging €27,781, 87% died, averaging €1,859. The incremental cost-effectiveness ratios for reductions of time from late to intermediate, late to early, and intermediate to early were €37,376, €16,679, and €3,225 respectively. CONCLUSIONS: Most costs after OHCA were made in-hospital. Mean costs per survivor were lowest with the shortest time to shock. Reduced time to shock scenarios showed incremental health care costs per life saved, which were well within acceptable societal limits. It is most efficient to put all effort in optimizing for shock delivery within seven minutes after the collapse. Further study should be directed at the program costs of measures to ensure early shock delivery.

A PROBABILISTIC MODEL TO ASSESS THE COST-EFFECTIVENESS OF A NEW STATIN (ROSUVASTATIN) IN THE UK
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OBJECTIVES: Coronary heart disease (CHD) is the single commonest cause of premature death in the UK and is a major priority for the NHS. A stochastic decision model was developed to establish the cost-effectiveness of treating new hypercholesterolaemic patients to European target levels of blood total cholesterol (TC) and low density lipoprotein-cholesterol (LDL-C), using either rosuvastatin, atorvastatin, simvastatin, pravastatin or fluvastatin. METHODS: The model was used to estimate the proportion of patients reaching target and the associated costs over a 1-year period from the perspective of the NHS. The effectiveness of the alternative statins were modelled using the percentage reductions in TC and LDL-C principally derived from the Statin Therapies for Elevated Lipid Levels compared Across doses to Rosuvastatin (STELLAR) trial (n = 2341). Second order probability distributions and Monte Carlo simulations were used to reflect parameter uncertainty.
Mean estimates of the difference in cost and patients treated to target (PTT) were used to establish the optimal adoption decision. The uncertainty surrounding this decision was characterised by estimating cost-effectiveness acceptability curves and the associated frontier. Sensitivity analysis assessed the robustness of the results to alternative scenarios including: baseline cholesterol levels, dosage regimens and the availability of significantly discounted generic simvastatin. **RESULTS:** Rosuvastatin is demonstrated to dominate (i.e. lower costs and a higher number of PTT) atorvastatin, simvastatin, and pravastatin. Compared to fluvastatin, the incremental cost per additional PTT of rosuvastatin was £24 using LDL-C and £83 using TC. The probability that rosuvastatin is cost-effective exceeds 95% provided the NHS is prepared to pay at least £35 per PTT to achieve target LDL-C cholesterol levels (£160 for TC). These results were demonstrated to be robust to all scenarios examined in the sensitivity analysis. **CONCLUSIONS:** The analysis demonstrates that rosuvastatin is more cost-effective than the other statins in achieving European cholesterol targets.

**ECO20**

**ECONOMIC MODELLING OF ANTIPLATELET THERAPY IN THE PREVENTION OF RECURRENT STROKE**

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**OBJECTIVES:** Antiplatelet therapy, following acute stroke, has been shown to have preventative efficacy against serious vascular events, including: recurrent stroke, transient ischaemic attack, and myocardial infarction. We used a Markov model approach to consider the relative cost-effectiveness of alternative antiplatelet therapies compared to standard low-dose aspirin. **METHODS:** An existing Markov model was updated with UK-specific data on expected health care resource usage and unit costs, and was used to consider levels of recurrent stroke-related events, and their associated cost implications, over periods of time of up to 25 years after an acute stroke event. Underlying risks were derived from the placebo-control arm of the ESPS-2 study (Years 1–2 of the model), and the community-based Oxford Community Stroke Project (Years 3–5 of the model). Beyond Year 5, risks were based on an age-matched cohort from the OCSP data. Relative risks for active treatments were derived from the ESPS-2 study for both Asasantin Retard and low-dose aspirin, and the CAPRIE study for clopidogrel. Estimates of expected resource usage were based on feedback on a structured questionnaire survey of UK-based clinicians. **RESULTS:** When compared to low-dose aspirin, Asasantin Retard provided additional benefits (29 avoided recurrent strokes per 1,000 treated patients over a 5-year period) for an additional cost of approximately £66,000 (a cost per avoided stroke of £2,249). A probabilistic Monte Carlo sensitivity analysis based on background placebo-level risks, relative risk for Asasantin Retard, costs of an acute stroke and costs of long-term care suggested that a 95% likelihood of the cost per avoided stroke value falling below £14,000. Asasantin Retard had lower treatment-related cost and avoided more recurrent stroke events than clopidogrel in the modelled 5-year analysis. **CONCLUSIONS:** Our modelled analysis suggests that Asasantin Retard is a cost-effective treatment compared to standard low-dose aspirin in avoiding acute recurrent stroke-related events.

**PCV21**

**THE COST OF STROKE IN SWEDEN—AN INCIDENCE ESTIMATE**

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**OBJECTIVE:** To estimate the excess cost of stroke in Sweden, and potential cost offsets by preventing the occurrence of first-ever stroke. **METHODS:** We adopted the incidence approach for estimating the present value of both direct- and indirect costs. Data on mortality, stroke recurrence and inpatient care were estimated from a national register of patient data with a 4-year follow-up period. To estimate costs for social services we used registered data on living conditions before stroke onset, and at 3 and 24 months. Costs for outpatient visits, rehabilitation, drugs and production losses due to premature death, and early retirement are estimated on the basis of both published and non-published sources. Lifetime costs are extrapolated from year five and for subsequent years adjusted by age, gender and excess mortality for stroke. **RESULTS:** With an incidence of 17,000 first-ever strokes in Sweden (195/100,000 individuals), the total excess direct and indirect cost of stroke is SEK9.5 billion (approximately US$1.2 billion or €1.0 billion) in year 2000 prices. About SEK7.4 billion is direct costs and SEK2.1 billion indirect costs. Half of the direct costs are costs for social services. The present value direct cost for an average stroke patient is SEK434,000 (US$54,250 or €48,740) and the indirect cost is SEK125,000 (US$15,600 or €13,750). **CONCLUSIONS:** There are large potential cost offsets both in the health care sector and in the social service sector if the incidence of first-ever stroke could be reduced.

**PCV22**

**ECONOMIC EVALUATION OF FONDAPARINUX COMPARED TO Enoxaparin in Venous Thromboembolism Prevention Following Hip Fracture Surgery**

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