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OBJECTIVES: Ticagrelor is a reversibly binding oral P2Y12-receptor antagonist developed for reduction of thrombosis. The PLATO trial compared ticagrelor+aspirin to clopidogrel+aspirin in individuals with acute coronary syndromes (ACS); ticagrelor was superior on the primary composite endpoint of cardiovascular death, myocardial infarction (MI) or stroke, without an increase in major bleeding events. The current study estimates the lifetime cost-effectiveness of ticagrelor relative to generic clopidogrel from a Singapore public health care perspective. **METHODS:** For the analysis of cost-effectiveness, a two-part cost-effectiveness model was used. The first part was a 12-month decision tree using PLATO trial data to estimate rates of major cardiovascular events, health care costs, and health-related quality of life. The second part was a Markov model estimating lifetime quality-adjusted survival and costs conditional on whether a non-fatal MI, a non-fatal stroke, or no MI or stroke occurred during the initial 12 months. The model applied a lifetime horizon to calculate mean direct medical costs and QALYs. The results are presented as incremental cost-effectiveness ratios (ICER's). Daily costs of SGD1.10 for generic clopidogrel and SGD6.00 for ticagrelor were applied. We calculated short term costs by applying Singapore unit costs, and costs from a comparable Asian country (Korea) to derive the Markov costs. Probabilistic sensitivity analysis was performed. **RESULTS:** Ticagrelor was associated with a lifetime QALY gain of 0.13, primarily driven by lower cardiovascular mortality. The resulting incremental cost per QALY gained was SGD10,136 from the public sector perspective. Probabilistic sensitivity analysis indicated that ticagrelor had more than 99% probability of being cost-effective given the recommended WHO willingness to pay threshold of one GDP/capita or SGD56,000 per QALY. **CONCLUSIONS:** Based on the PLATO trial data, one year treatment with ticagrelor+aspirin versus generic clopidogrel+aspirin in ACS patients, relative to WHO reference standards, is cost-effective from a Singapore public health care perspective.

PCV27

COST-EFFECTIVENESS OF LEFT ATRIAL APPENDAGE OCCLUSION DEVICE FOR STROKE PREVENTION IN ATRIAL FIBRILLATION

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OBJECTIVES: To estimate the long-time cost-effectiveness of Left Atrial Appendage (LAA) occlusion device for preventing stroke in a hypothetical cohort of 65-year-old patients with atrial fibrillation (AF). **METHODS:** A decision analytic model was used to perform a cost-effectiveness analysis comparing LAA occlusion device and 5 alternative anticoagulant therapies from a health care provider perspective. Treatment strategies for AF are included Aspirin, dual therapy with Aspirin and Clopidogrel, Warfarin, Dabigatran 150mg or 110mg, and LAA occlusion device. The parameters including rate of adverse events, utility, and costs were derived from the ACTIVE trial, RE-LY trial, PROTECT trial, and published references in our model. Outcomes are quality-adjusted life years (QALYs), lifetime costs, and incremental cost-effectiveness ratios (ICERs). Costs and QALYs were discounted at an annual rate of 3%. One way sensitivity varied by the CHADS2score and probabilistic sensitivity analyses (PSAs) were conducted to assess parameter uncertainty. **RESULTS:** Compared with Aspirin, LAA occlusion device, Warfarin, Dabigatran 150mg and 110mg were cost-effective. The ICERs were US$975 per QALY with LAA occlusion device, US$4,982 per QALY with Warfarin, US $10,672 per QALY with Dabigatran 150mg, US$10,972 per QALY with Dabigatran 110mg. When using Warfarin as a comparator, LAA occlusion device is less costly and more effective, Dabigatran 150mg cost US$28,556 per QALY, and Dabigatran 110mg cost UD$37,328 per QALY. For patient with CHADS2 score of 0, 1, 2, 3, or ^{3}a4, the ICREs of LAA occlusion device over Aspirin were US$1,257 per QALY, US$1,104 per QALY, US$894 per QALY, US$626 per QALY, US$518 per QALY, respectively. LAA occlusion device was cost-effective over 95% of the Monte Carlo simulation using a cost-effectiveness threshold of US$50,000 per QALY. **CONCLUSIONS:** The LAA occlusion device is considered cost-effective compared with Aspirin, Warfarin, Dabigatran 150mg or 110mg in AF patients.

PCV28

COST-EFFECTIVENESS OF PRESENTATION AND DELAYED TROPONIN TESTING FOR ACUTE MYOCARDIAL INFARCTION

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OBJECTIVES: To estimate the cost-effectiveness of delayed troponin testing for myocardial infarction (MI), as recommended in current guidelines, compared to troponin testing and other biomarkers at presentation. **METHODS:** We developed a decision analytic model to estimate the cost-effectiveness of diagnostic strategies for MI, measured as the incremental cost per quality-adjusted life year (QALY) gained by each strategy compared to the next most effective alternative. The model was applied to a hypothetical population of 1000 patients attending hospital with symptoms suggesting MI but a normal or non-diagnostic electrocardiogram (ECG) and no major co-morbidities requiring hospital treatment. Sensitivity and specificity of the strategies were estimated by meta-analysis of diagnostic cohort studies of presentation troponin T. The risk of reinfarction and death (with and without treatment) was determined using data from a study by Mills et al, Lifetime QALYs were estimated from life expectancy and corresponding annual utilities. The discounted life expectancy of patients with MI and MI with reinfarction was estimated from Polanczyk et al, while the utility of patients with MI was estimated from Ward et al. **RESULTS:** In all scenarios tested presentation high sensitivity troponin testing was the most effective strategy with an incremental cost-effectiveness ratio (ICER) below the £20,000/QALY threshold. Delayed troponin testing was only likely to be cost-effective if a discharge decision could be made as soon as a negative result was available and the £30,000/QALY threshold was used. **CONCLUSIONS:** Delayed troponin testing is unlikely to be cost-effective compared to high sensitivity troponin testing at presentation in most scenarios. Current guidelines recommending 10-12 hour troponin testing does not appear to promote cost-effective use of hospital resources, unless services are in place to allow rapid decision making once delayed test results are available.

PCV29

LONG-TERM COST-EFFECTIVENESS OF TICAGRELOR IN PATIENTS WITH ACUTE CORONARY SYNDROME IN THAILAND

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OBJECTIVES: The PLATO trial showed that ticagrelor significantly reduced the rate of cardiovascular mortality, myocardial infarction, or stroke compared to clopidogrel in patients with acute coronary syndrome (ACS) with additional drug cost. Critical appraisal is necessarily important to justify adopting this new treatment in the era of limited health care resources. This study aimed to evaluate long-term cost-effectiveness of ticagrelor plus acetylsalicylic acid (ASA) versus clopidogrel plus ASA in ACS patients in Thailand. **METHODS:** A two-part decision-analytic model, comprising a one-year decision tree and a long-term Markov model, was constructed to estimate lifetime costs and quality-adjusted life years (QALYs) from Thai health care payer's perspective. For the first year, data from PLATO were used to estimate rate of cardiovascular events, resource use, and QALYs. For year two and onwards, clinical effectiveness was estimated conditional on individual health states occurred during the first year. Unit costs were based on Thai database. All costs presented in year 2011 and effects were discounted at 3% per annum. A series of sensitivity analyses were performed to assess robustness of the model. **RESULTS:** The incremental cost -effectiveness ratios (ICERs) with ticagrelor were 312,044 and 79,979 THB/QALY compared to generic and branded clopidogrel, respectively. Probabilistic sensitivity analysis indicated that ticagrelor has high probabilities of being cost effective compared to generic (85.0%) and branded clopidogrel (99.9%) at a willingness to pay threshold of 3 times GDP/capita. **CONCLUSIONS:** It might be appropriate to assert that ticagrelor is an economically valuable treatment of ACS within the Thai context.

PCV30

COST-EFFECTIVENESS OF CILOSTAZOL, NAFTIDROFURYL OXALATE, PENTOXIFYLLINE AND INOSITOL NICOTINATE FOR THE TREATMENT OF INTERMITTENT CLAUDICATION IN PEOPLE WITH PERIPHERAL ARTERIAL DISEASE IN THE UK

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Peripheral arterial disease (PAD) is a condition in which there is blockage or narrowing of the arteries that carry blood to the peripheries. The most common symptom of PAD is intermittent claudication (IC), characterised by pain in the legs on walking that is relieved with rest. Symptoms of IC can be managed with exercise therapy and/or vasoactive drugs. **OBJECTIVES:** To assess the cost-effectiveness of the vasoactive drugs cilostazol, naftidrofuryl oxalate, pentoxifylline and inositol nicotinate for IC due to PAD in adults whose symptoms continue despite a period of conservative management. **METHODS:** A Markov decision model was developed to assess the lifetime costs and benefits of each vasoactive drug compared with no vasoactive drug and with each other. Regression analysis was undertaken to model the relationship between maximum walking distance and utility based on patient-level data from a trial of cilostazol to enable quality of life impacts to be estimated for the other drugs under consideration. Resource use data were sourced from the literature and a comprehensive sensitivity analysis was undertaken. **RESULTS:** The economic evaluation suggests that naftidrofuryl oxalate is more effective and less costly than cilostazol and pentoxifylline and has an estimated cost per QALY gained of around £6070 compared with no vasoactive drug. Whilst there is limited effectiveness evidence associated with inositol nicotinate, threshold analysis suggests that it is unlikely to be considered to be cost-effective due to its more expensive acquisition cost. **CONCLUSIONS:** This is the first published cost-utility analysis in this area which extrapolates data over a lifetime and uses effectiveness evidence from a network meta-analysis. In contrast to previous guidelines recommending cilostazol, this comprehensive analysis suggests that naftidrofuryl oxalate is the only vasoactive drug for PAD which is likely to be cost-effective at a willingness to pay threshold of £20,000 per QALY gained.

PCV31

COST-EFFECTIVENESS OF APIXABAN VERSUS ENOXAPARIN FOR THE PREVENTION OF POSTSURGICAL VENOUS THROMBOEMBOLISM IN KOREA

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OBJECTIVES: To evaluate the cost-effectiveness of apixaban versus enoxaparin in the prevention of venous thromboembolism (VTE) after total hip replacement (THR) and total knee replacement (TKR) from the perspective of the Korean health care system. **METHODS:** A decision tree model was developed to simulate the costs and outcomes of VTE prevention, and consisted of 3 phases- 1) prophylaxis phase; 2) post-prophylaxis phase (up to 90 days); and 3) long-term complications phase (up