PCV120

cost-effectiveness of edoxaban compared with warfarin for the prevention of stroke and systemic embolic events in the UK

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objectives: to assess the cost-effectiveness of edoxaban 60mg versus warfarin for the prevention of stroke and systemic embolic events among patients with non-valvular atrial fibrillation (nvaf) in the uk, from the perspective of the nhs. methods: a markov model was developed to simulate the course of disease in hypothetical cohorts of patients with nvaf and to assess the cost-effectiveness of edoxaban versus the current uk standard of care, warfarin. the model used data from the engage study, and was based on patients with chads2 score of 3. utilities were derived from a network meta-analysis of italian literature on health state utilities for stroke and systemic embolic events. qalys were calculated from extracted data and the national reference cost database; both were discounted at 3.5% per annum. health outcomes were assessed in quality-adjusted life years (qaly), and evaluated over a lifetime time horizon. deterministic and probabilistic sensitivity analyses (psa) were conducted to evaluate the effect of uncertainty in input parameters on the results. results: in the base case analysis (chads2 ≥ 2), the incremental cost-effectiveness ratio (icer) for edoxaban compared with warfarin was €12,883 per qaly gained. at a threshold of €20,000 per qaly gained, the net monetary benefit associated with edoxaban was €1,406. edoxaban was also cost effective compared with warfarin in higher risk (chads2 ≥ 3) and higher anticoagulant control (cttr>60%) subgroups (icer €7,012 and €22,576 per qaly, respectively). sensitivity analyses confirmed that these findings are robust to a wide range of assumptions about model inputs. starting age, edoxaban cost, monitoring costs and mortality due to non-ich major bleeds are the drivers of the results. psa indicated that the 95% confidence intervals of each scenario are within the range of the cost-effectiveness plane for this comparison, and that the probability that edoxaban is cost-effective versus warfarin is more than 50%. conclusions: compared with warfarin, edoxaban represents a cost-effective alternative for stroke prevention in uk patients with nvaf.

PCV121

cost-utility analysis of chocolate consumption for prevention of cardiometabolic disease

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objective: randomized controlled trials have shown favorable effects of polyphenols and flavonoids found in chocolate on various cardiometabolic risk factors, including inflammatory markers, blood pressure, lipids, and insulin sensitivity. epidemiologic studies suggest that chocolate may reduce risks of cardiovascular diseases. this study aims to assess the cost-utility of chocolate consumption from a us health system perspective. methods: a cohort life-table analysis was developed to model life years (ly) and quality-adjusted life years (qaly) lost to disease, consumption and non-consumption over a lifetime horizon in us adults. age- and sex-specific disease incidence and mortality rates were used to model outcomes of cardiometabolic diseases, including coronary heart disease, stroke, and diabetes. relative risks of cardiometabolic disease associated with chocolate consumption were obtained from meta-analyses of prospective cohort and cross-sectional studies. utility weights, baseline healthcare costs, and attributable disease costs were obtained from the usa. costs of chocolate consumption, non-consumption, and early death. data on efficacy and safety were derived from a network meta-analysis. results: over 6-months and tracked over a course of 5-years in a markov model. modeled clinical events included recurrent vte, major bleed, clinically relevant non-major bleed, chronic thromboembolic pulmonary hypertension, and death. data on efficacy and safety were derived from a network meta-analysis. medical costs of clinical events were extracted from a dedicated analysis of french health administrative databases and utility data were derived from literature. to assess the cost and benefits of chocolate consumption, 18 costs and 18 utilities over 12 months and 18 were examined in scenario analyses. additionally, probabilistic sensitivity analyses accounted for uncertainty in model parameters were conducted. results: over treatment duration of 6 months at lifetime horizon, chocolate was the dominant (less costly and more effective) alternative (6,573 and 3.38 qalys) compared to fondaparinux/vka (6,621 and 3.38 qalys) and rivaroxaban (6,734 and 3.38 qalys) and dabigatran (7,632 and 3.37 qalys). probabilistic sensitivity analyses revealed chocolate was more likely to be cost-effective than all other strategies. conclusions: an extended treatment duration of 12 months, chocolate remained dominant plus rivaroxaban and dabigatran but was not cost-effective compared to fondaparinux/vka (icur: 3,098/qaly) and lmwh/vka (icur 2,381/qaly). similar results were observed for treatment duration of 18 months with an increase of 5,634 and 5,083/qaly, respectively. conclusions: chocolate can offer substantial clinical and economic benefits over alternative therapies for acute and extended treatment of vte.

PCV124

a literature review to evaluate the pharmaeconomic value of ranolazine for the treatment of symptomatic chronic stable angina

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objectives: to conduct a systematic review on the pharmaeconomic value of ranolazine as standard-of-care (soc) for the treatment of symptomatic chronic stable angina. methods: a comprehensive search of the medical literature was conducted. analysis registry without time limits were searched. articles in english were identified with the following keywords: cost, economic, ranolazine, ranexa, angina, coronary artery disease. the data of included studies were independently reviewed by two investigators against pre-determined inclusion and exclusion criteria. the quality of health economic studies scale was used to assess the quality of the included studies. the data of selected studies were extracted onto a data extraction form and then synthesized. cost-effectiveness data for each comparator, incremental cost per quality-adjusted life-year (icur) gained and results from sensitivity analyses were extracted. results: five studies containing evidence on effectiveness and cost of ranolazine were identified. four of these studies assessed the cost-utility of ranolazine added to soc compared to soc alone, using decision tree or markov models whereas one was a retrospective cost-comparative study. in all studies, patients were stratified according to their angina frequency symptoms. the analysis was conducted from a payer perspective with the price kept for in 4 studies and from the societal perspective in 1 study. the time horizon of analysis did not exceed the 1 year at any study. ranolazine appeared to be cost-effective since it reduced the number of angina related clinical events and improved quality of life with an incremental cost-effectiveness ratio (icer) varying from €4,000 to €15,000 per qaly gained. the ranolazine acquisition cost was the variable that mainly drove the icer. conclusions: the existing evidence showed that ranolazine is cost-effective for the second-line treatment of patients with symptomatic csaa, added to soc. further research is required to confirm the cost-effectiveness of ranolazine in each angina frequency group.

PCV125

cost-utility analysis of apixaban in the acute treatment and prevention of venous thromboembolism in france

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objectives: to evaluate the cost-effectiveness of apixaban versus existing therapeutically alternatives (fonaparinux/vka, lmwh/vka, rivaroxaban, dabigatran) in the acute treatment and prevention of venous thromboembolism (vte) from the french national healthcare insurance perspective. methods: a cohort of unselected patients with vte were placed on one of five therapeutic strategies for 6-months and tracked over a course of 5-years in a markov model. modeled clinical events included recurrent vte, major bleed, clinically relevant non-major bleed, chronic thromboembolic pulmonary hypertension, and death. data on efficacy and safety were derived from a network meta-analysis. medical costs of clinical events were extracted from a dedicated analysis of french health administrative databases and utility data were derived from literature. to assess the cost and benefits of apixaban, cost and benefits of the five strategies were included. 12 and 18 months were examined in scenario analyses. additionally, probabilistic sensitivity analyses accounted for uncertainty in model parameters were conducted. results: over treatment duration of 6 months at lifetime horizon, apixaban was the dominant (less costly and more effective) alternative (6,573 and 3.38 qalys) compared to fonaparinux/vka (6,621 and 3.38 qalys) and rivaroxaban (6,734 and 3.38 qalys) and dabigatran (7,632 and 3.37 qalys). probabilistic sensitivity analyses revealed apixaban was more likely to be cost-effective than all other strategies. conclusions: an extended treatment duration of 12 months, apixaban remained dominant plus rivaroxaban and dabigatran but was not cost-effective compared to fonaparinux/vka (icur: 3,098/qaly) and lmwh/vka (icur 2,381/qaly). similar results were observed for treatment duration of 18 months with an increase of 5,634 and 5,083/qaly, respectively. conclusions: apixaban can offer substantial clinical and economic benefits over alternative therapies for acute and extended treatment of vte.
PCV126

COST-EFFECTIVENESS OF EDOXABAN COMPARED WITH OTHER LICENSED NOAC FOR THE PREVENTION OF STROKE AND SYSTEMIC EMBOLIC EVENTS IN THE UK

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OBJECTIVES: This review aims to assess the cost-effectiveness of once-daily edoxaban 60mg (30mg dose reduced) compared with other licensed non-VKA oral anticoagulants (NOACs) for prevention of stroke and systemic embolic events among patients with non-valvular atrial fibrillation (NVAF) in the UK.

METHODS: A Markov model was developed to simulate the course of disease and resource utilisation in a hypothetical cohort of patients receiving edoxaban or the other NOACs currently licensed for use in the UK. The model included dabigatran, rivaroxaban, and apixaban. In the absence of head-to-head clinical studies between NOACs, a network meta-analysis was conducted to estimate the relative efficacy and safety of edoxaban compared with all treatments of interest. Where data were available, the analysis was based on patients with CHA2DS2-VASc 1 to 2; otherwise, the analysis was based on patients with CHA2DS2-VASc 3 or higher. Cost and utility data were taken from a validated model to derive values from published studies adjusted for quality-adjusted life years (QALYs). Utilities and costs were extracted from the literature and the NHS reference cost database and discounted at 3.5% per annum. Outcomes were evaluated over a lifetime horizon. The average age of patients entering the model was 72, as in the ENGAGE-AF study. Sensitivity analyses were conducted to evaluate the effect of uncertainty in inputs on the results.

RESULTS: Edoxaban was dominant compared with rivaroxaban and dabigatran 110 mg BD. Edoxaban was dominated by apixaban, which was a cheaper and safer option, with comparable efficacy. Edoxaban was found to be the most cost-effective strategy compared with rivaroxaban and dabigatran based on the modelled clinical trial data. An improvement in QOL of 0.05-0.07 QALYs was observed in patients on edoxaban compared with rivaroxaban and dabigatran. Compared with rivaroxaban and dabigatran, annualised healthcare resource costs for patients on edoxaban were reduced by £394 to £878 and 0.08 to -0.08 QALYs. Sensitivity analyses indicate the findings were robust.

CONCLUSIONS: Accepting the limitations of modelling with restricted data availability and absent head-to-head trials, this analysis suggests that edoxaban is associated with similar outcomes to the other NOACs in the UK setting. Edoxaban is dominant compared with the most widely used once-daily NOAC, rivaroxaban. Both dabigatran and apixaban are given twice daily, as e doxaban has a higher acquisition cost than the other NOACs.

PCV127

ECONOMIC EVALUATION OF A PHARMACOGENOMIC TEST FOR STATIN-INDUCED MYOPATHY IN CARDIOVASCULAR HIGH-RISK PATIENTS INITIATING A STATIN

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OBJECTIVES: Statins are the cornerstone of cardiovascular disease prevention reducing cardiovascular disease (CVD) risk by as much as 25% to 35%. One reason for interrupting statin therapy is statin-induced myopathy. Myopathy is a general term for muscular skeletal disease that can range from muscle pain to rhabdomyolysis. The incidence rate of statin-induced myopathies has been reported to range from 10% to 20%. The objective of the present study was to evaluate the economic value of a pharmacogenomic (PGx) test to diagnose statin-induced myopathy from the perspective of the Ministry of Health. The model assumes that only patients who experienced muscular skeletal pain (MSP) are tested and that patients and physicians are fully compliant to the test results. For simplification purposes, we assumed without a PGx test, all patients experiencing MSP interrupt their statin. The cost of the PGx test is assumed at £250.

RESULTS: The results of the model show that the PGx test is a dominant strategy with a perfect test and remains nearly cost neutral with an imperfect PGx test having 20% of false positive and false negative rates (i.e., incremental cost of £85) yielding an incremental cost-utility ratio (ICUR) of £451 per quality-adjusted life year (QALY). Deterministic sensitivity analyses show that the most influential model parameters were modelled with statistical distributions. The probabilistic sensitivity analysis show that at a willingness-to-pay of £5,850 per QALY, 90% of the model simulations favor the PGx test strategy.

CONCLUSIONS: The model shows that a PGx test for the probability of statin-induced myopathy was derived in patients with MSP having ≤20% of false positive and false negative test results, is an optimal strategy at all accepted conventional willingness-to-pay ICUR thresholds.

PCV128

SYSTEMATIC REVIEW OF PRODUCTIVITY LOSSES ASSOCIATED WITH CARDIOVASCULAR DISEASE IN EUROPE

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OBJECTIVES: People with cardiovascular disease (CVD) often require time off work due to illness of surgery. Post-myocardial infarction (MI) or stroke, individuals incur income losses and output is reduced for employers and the wider economy. A systematic review was conducted to identify studies reporting the magnitude of these losses for European populations, for use in economic analyses. A systematic search was conducted in the Cochrane Library and five databases of SF-36 QoL questionnaire. Direct Costs were analyzed from the Brazilian public health perspective. Results: 2100 patients were propensity matched, 1050 non-stationary data were analyzed. Results were derived after a random effect meta-analysis. Utility measures were obtained from SF-36 QoL database and an analysis of propensity score matching. Non-administrative database of a teaching hospital after record linkage with national registry of mortality database and an analysis of propensity score matching. Non-random losses published for European populations, and is useful for populating economic models or burden-of-disease studies that adopt a societal perspective.