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COST-EFFECTIVENESS ANALYSIS OF APOIXABAN IN PATIENTS WITH NON-VALVULAR ATRIAL FIBRILLATION IN GUATEMALA IN 2014

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BACKGROUND: Atrial fibrillation (AF) is associated with development of thromboembolic events [1]. The standard therapy used in patients with non-valvular atrial fibrillation (NVAF) with risk of stroke is Warfarin. There are new oral anticoagulants (NOACs) that also are recommended [2]. OBJECTIVES: Evaluate cost-effectiveness of Apixaban compared to Oral Anticoagulants in the prevention of thromboembolic events in NVAF patients from perspective of Guatemala’s Public Health Care System (GSS). METHODS: A Markov decision-analysis model was designed using data from several sources: [3,4,5,6,7] (indirect comparisons, where appropriate) to evaluate lifetime costs and quality-adjusted life-years (QALY) of Apixaban (mg/kgID) in comparison to Rivaroxaban (24mg/day) and Warfarin (mg/day). GSS used Warfarin and Rivaroxaban in NVAF patients. The health states evaluated were: ischemic and hemorrhagic strokes, 71 hemorrhagic events, 1 MI and 3 SE in comparison to Warfarin. Overall costs in a life period per patient were US$9,190; US$11,763; US$12,045 for Warfarin, Apixaban, and Rivaroxaban respectively. The high-risk patients were defined as those achieving the lowest possible INR using an institutional perspective. The population in this analysis was a cohort of 1000 patients with NVAF, 51 ischemic strokes and 3 bleedings vs. anticoagulants. The incremental cost-effectiveness ratio (ICER) was determined for the treatment of patients with NVAF 21 ischemic strokes and 4 related deaths vs. dabigatran 150mg and 11 ischemic strokes, 28 bleedings and 5 related deaths vs. dabigatran 150mg and 7 ischemic strokes, 7 bleedings and 6 related deaths vs. rivaroxaban. Apixaban was associated with 0.334 years life (LY) and 0.273 quality-adjusted life-years (QALY) gain when compared to aspirin, 0.181 LYG and 0.190 QALYs gain compared to warfarin, 0.123 LYG and 0.106 QALYs gain when compared to dabigatran 150mg, 0.081 LYG and 0.07 QALYs gained compared to dabigatran 150mg and 0.059 LYG and 0.048 QALYs gained compared to rivaroxaban. Apixaban was more effective and less costly (dominant) than dabigatran 110mg and dabigatran 150mg and cost-effective alternative compared with aspirin, warfarin and rivaroxaban. CONCLUSIONS: Apixaban is a cost-effective or dominant alternative compared with rivaroxaban for the prevention of stroke in patients with NVAF from the payer’s perspective of the Ministry of Public Healthcare in Ecuador (MEPH). FUTURE DIRECTIONS: The cost-effectiveness of Apixaban compared to Oral Anticoagulants in the prevention of thromboembolic events in NVAF patients from perspective of the Ecuadorian Ministry of public healthcare.

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SYSTEMATIC REVIEW OF RECENT PHARMAECONOMIC EVALUATIONS RELATED TO GENOTYPE-GUIDED THERAPY IN PATIENTS AT HIGH RISK FOR THROMBOEMBOLIC EVENT

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OBJECTIVES: Utilizing previously published selection criteria, identify and evaluate current literature that is focused on cost-effectiveness of genotype-guided medication programs for patients at high risk for a thrombotic event. The aim of study is to provide the scientific community with a comprehensive, yet brief overview of studies that evaluate the potential use of genetic tests to predict the risk of a thromboembolic event within this subset of cardiovascular disease. METHODS: The literature search was conducted within PubMed and Web of Science databases. The objective was to identify, retrieve and synthesize studies that could inform future development of personalized medicine research to provide the scientific community with a comprehensive, yet brief overview of studies that met the search term “pharmacogenetic” and the term “pharmacoeconomic”. RESULTS: Ten articles met inclusion criteria. Genotypes CYP2C19, CYP2C9, VKORC1, RIF1 were used alone and/or in combination within different patient populations (Internet Table 1 included) (number of patients: (1) Warfarin 4, (2) Clopidogrel (including other in-class agents: 2), (3) Rivaroxaban/phenprocoumon (1), (4) Rivaroxaban/phenprocoumon and Apixaban (1), (5) Rivaroxaban/phenprocoumon and Dabigatran (2), (6) Rivaroxaban/phenprocoumon and Dabigatran (2) and (7) Rivaroxaban/phenprocoumon and Dabigatran (2). The following types of economic evaluations were utilized either alone or in combination: CEA, CUA, CUIR, CBA, Threshold Analysis, ICER, ICBR, EA, INB. Outcome measures and sensitivity analysis were variable and did not always reach thresholds of significance within the overall study population. CONCLUSIONS: Comprehensive studies on treatments were lacking and inconsistent methodology. Specific study guidelines for the field of genotype-guided therapy are needed. With multiple block-buster medications reaching patent expiry, the cost-effectiveness and sensitivity analysis from previous years warrant a second evaluation. It is anticipated that genotype-guided treatment may be shifting to a cost-effective option for only the treatment-resistant, or smaller populations with a differentiated risk status. It is in contrast to selecting genotype-driven therapy as an initial option for the masses of patients compared with the use of pharmacogenetic testing, “treat everyone the same” algorithm. 1Stephan Vogter et al. “Pharmacoeconomic Evaluations of Pharmacogenetic and Genomic Screening Programmes” Pharmacoeconomics 2008: 26(7) 569-587.

PCV77

COST-EFFECTIVENESS OF AN ANTICOAGULANT CLINIC AFTER INTRODUCTION OF NEW ORAL ANTICOAGULANTS IN PATIENTS WITH NON-VALVULAR ATRIAL FIBRILLATION IN THE UNITED STATES

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OBJECTIVES: To assess cost-effectiveness of anticoagulant clinics after FDA approval of New Oral Anticoagulants (NOACs) for preventing of ischemic stroke in Atrial Fibrillation (AF) patients in the United States. METHODS: A decision tree was built using outcomes data obtained from randomized clinical trials and publicly available cost data. The analysis compared the cost-effectiveness of 150mg dabigatran twice a day taken with no anticoagulation clinic monitoring versus warfarin titrated to dose based upon anticoagulation clinic monitoring. The analysis was for one year using an institutional perspective. The population in this analysis was a cohort of AF patients ≥65 years old, with a mean CHADS2 score of 2, and no contraindication to anticoagulation. The primary outcomes measured were cost in US$ and Quality Adjusted Life Year (QALY). All data were subject to sensitivity analyses. RESULTS: The base case analysis showed that changing from warfarin to dabigatran without monitoring resulting in an additional $251,000 per QALY saved. Sensitivity analyses found that the model was sensitive to utilities assigned to outcomes and the probability of death. CONCLUSIONS: NOACs claim to reduce the need for anticoagulation monitoring, thereby shifting the need for anticoagulation clinics. This study showed that substituting NOACs for warfarin in this population was not within acceptable willingness to pay values for new therapies. It is likely that anticoagulation clinics will remain a cost-effective option in the near future.

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THE COST-EFFECTIVENESS OF DABIGATRAN ETIXELATE COMPARED WITH EDOCRAN IN THE TREATMENT OF ACUTE VENOUS THROMBOEMBOLISM IN THE UK

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OBJECTIVES: The purpose of this study was to determine the cost-effectiveness of intensive doses of Simvastatin, Atorvastatin and Dabigatran etixilate combination antithrombotic agents in high-risk CHD outpatient in secondary-line treatments. METHODS: A cross-sectional retrospective study in high-risk CHD outpatients was performed at the Chandrakeeba Medical and Research Institute in the Malaysian Air Force. Data collection were done by computerization combined with reviewing medical record during 6 months. The incremental cost-effectiveness ratio (ICER) was determined for the cost-effectiveness analysis and comparisons of the three groups with intensive doses (Simvastatin 40 mg/day and Atorvastatin 20-40 mg/day monotherapy or combination therapy with Ezeitimibe 10 mg) on the provider perspective. The direct medical costs were computed by micro-costing method (Reference price in 2014) and divided by the percentage differences LUL-C reduction. RESULTS: From 250 patients with high risk CHD treated by intensive doses. Sixty-seven, 45 and 38 patients took Simvastatin, Atorvastatin and Dabigatran etixilate combination respectively. The outcome determined by the percentage differences LUL-C reduction showed that Simvastatin had the lowest effectiveness compared to other groups (mean ± SD: 18.3 ± 32.3%, -28.0 ± 24.8%, and -37.8 ± 17.2%, p= 0.0001 respectively). ICER determination showed that the intensive doses treatment of Atorvastatin had the best result (ICER = 92.91 THB) whereas than of Atorvastatin-Ezeitimibe combination was poorer (ICER = 732.44 THB). CONCLUSIONS: Comparison of intensive doses Simvastatin, Atorvastatin, and Dabigatran etixilate in the UK high-risk CHD outpatients showed that intensive dose Atorvastatin regimen was the most cost-effectiveness.