EFFECTIVENESS STUDY SETTINGS LOWERS HEALTH CARE COSTS: THE MEDCO-MAYO WARFARIN PHARMACOGENOMIC TESTING FOR WARFARIN USE IN TYPICAL OUTPATIENT

Aubert RE1, Epstein RS2, Yao J1, O’Kane DJ3, Tintinnelli FJ, Teagarden JR1, Moyer TP1

Medco Solutions, Inc., Franklin Lakes, NJ, USA, 1 Mayo Clinic, Rochester, MN, USA

OBJECTIVES: To measure the comparative direct medical care costs between incident warfarin patients who did or did not experience genotyping to guide dosing.

METHODS: We reanalyzed the previously published MM-WES in which we dem- onstrated the cost-effectiveness of pharmacogenotyping to reduce the risk of hospitalization and thromboembolism in patients who initiate warfarin treatment in typical outpatient practice settings. We used a cost consequence analysis to estimate the 6-month costs and consequences of warfarin genotyping. The intervention group (IG) comprised 896 patients and a comparison group was constructed from 2688 historical controls (HC). The direct medical care costs were estimated for inpatient, office visits and laboratory utilization (including cost of genotyping) and summed to a total cost per patient. A bootstrapping method was performed to estimate confidence limits around the difference in mean cost per patient to assess statistical significance.

RESULTS: Over the 6-month monitoring period, the all cause-related per patient costs for the genotyped IG patient was $4127 compared to $5040 for HC. The all-cause difference of $-913 per patient reached statistical significance, 95% CI ($-895, $-930). Various subgroup analyses including warfarin-related costs will be presented.

CONCLUSIONS: Our analysis suggests that providing results of warfarin genotyping to treating physicians in typical outpatient settings produces cost savings within six months of initiating warfarin therapy. These estimates are likely conservative as they do not include ancillary costs such as reimbursement or indirect costs, nor do they estimate costs beyond six months.

PCV69 ECONOMIC EVALUATION OF PRIMARY PREVENTION OF CARDIOVASCULAR DISEASES IN MILD HYPERTENSION: A SCENARIO ANALYSIS FOR THE NETHERLANDS

Stevanovic J1, O’Prinsen AC2, Postma MJ1, Fechaviczová P3

1 Thermo Fisher Scientific, Gouda, The Netherlands, 2 National Institute for Food and Nutrition Research Institute, Budapest, Hungary, 3 Erasmus University, Rotterdam, the Netherlands

OBJECTIVES: According to current Dutch guidelines, antihypertensive treatment for patients with mild hypertension is recommended if the 10-year fatal cardiovascular disease (CVD) risk exceeds 10% or if accompanying risk factors are present. Recent data suggests that prevention of CVD risk estimates might be more informative than 10-year risk estimates. The aim of this study was to estimate the economic impact and influence on CVD risk of blood pressure (BP) reduction, in patients ineligible for treatment according to guidelines.

METHODS: A Markov model was developed to assess the lifetime costs and health benefits of BP reduction. The model was validated with the results of the ASCOT and CAFE studies.

RESULTS: The inclusion of magnesium orotate in CHF therapy improves the health (NNT = 1/0.2, 24 = 4), it gives an additional 0.14 QALY’s and requires additional costs only. Direct medical costs were included in the cost value. Incremental cost-effectiveness ratio was $157,8 $/add. QALY. It is less than GDP per capita (current threshold willingness to pay), i.e. cardiovascular therapy with magnesium orotate is cost effective. However, taking into account the financial capacity of the health system in Ukraine, in real practice such costs for achieve better health are less acceptable than the costs of standard therapy. Indirect costs (loss productivity) during 2 years in the application of standard therapy with magnesium orotate were less than indirect costs in application only standard therapy. Saving money - 606,7 $ per patient.

CONCLUSIONS: Thus the inclusion of magnesium orotate in the standard therapy in patients with CHF is cost effective. High direct costs are compensated due in indirect costs savings.

PCV70 COST EFFECTIVENESS OF TICAGRELOR IN THE TREATMENT OF ACUTE CORONARY SYNDROME IN GERMANY

Theidel U1, Asselberg C2, Giannitsis E3, Katus H2

1 Herzog-GmbH, Hannover, Germany, 2 ESIR Ltd, Kuopio, Finland, 3 Department of Medicine III, University of Heidelberg, Heidelberg, Germany

OBJECTIVES: To evaluate the long-term effectiveness of ticagrelor in the treatment of acute coronary syndromes (TAC) compared with clopidogrel/ASA in Germany.

METHODS: A Markov model, comprising a decision tree approach for the first year followed by a long-term Markov model, was constructed to estimate lifetime costs and life-year gained (LYG) of treating ACS patients for one year with ticagrelor/ASA compared with clopidogrel/ASA. Data for the first year were derived from the PLATO trial. For the long-term model, the incremental cost of ticagrelor compared to clopidogrel/ASA was calculated in a range from $30,000 to $32,000 per LYG.

CONCLUSIONS: Ticagrelor is cost-effective for patients with acute coronary syndromes.

PCV71 PHARMACOGENOMIC TESTING FOR WARFARIN USE IN TYPICAL OUTPATIENT SETTINGS LOWERS HEALTH CARE COSTS: THE MEDCO-MAYO WARFARIN EFFECTIVENESS STUDY

Gerasimova KV1

1 The First Moscow State Medical University named after I.M. Sechenov, Moscow, Russia, Moscow, Russia

OBJECTIVES: To evaluate the potential clinical and economic outcomes of using genotype data to guide the management of warfarin anticoagulation therapy.

METHODS: A decision tree was designed to simulate two groups – group of standard care and group of pharmacogenetically driven therapy. Both groups were stratified by patient risk alleles (GENotypes) present in patients with alleles CYP2C9*2 and CYP2C9*3 and patients with genotype CYP2C9*11. CYP2C9*11 patients were subdivided further into VKORCB and VKORCAA/AB types. Outcomes in each group were: major bleeding (gastrointestinal and intracranial minor bleeding (hemorrhages into heart, lungs, hemoptalmos and others) and no bleeding. Direct medical costs from the Russian healthcare system point of view were estimated. Rate of bleedings in patients with different genotypes and relative risks of bleedings in pharmacogenetic-oriented approach were obtained from the literature. Sensitivity analysis to key parameters was performed.

RESULTS: In the basic scenario costs of the standard treatment were performed. Higher than in pharmacogenetics-oriented group: 8545 rubles (USD305) and 6806 rubles (USD243) for 1 patient per year respectively. Sensitivity analysis showed that the model is sensitive to the price of pharmacogenetic test only: the pharmacogenetic-oriented group’s saving was less than 2100 rubles (USD70) and 1600 rubles (USD53).

CONCLUSIONS: In the Russian health care system, pharmacogenetic-oriented warfarin therapy is cost saving if the price of pharmacogenetic test does not exceed 2600 rubles (USD93).

PCV72 CLINICO-ECONOMIC EVALUATION OF COMPLEX CARDIOVASCULAR THERAPY WITH MAGNESIUM OROTATE IN PATIENTS WITH CHRONIC HEART FAILURE: A CLINICO-ECONOMIC EVALUATION OF COMPLEX CARDIOVASCULAR THERAPY WITH MAGNESIUM OROTATE IN PATIENTS WITH CHRONIC HEART FAILURE

Ivakhov VB, Kryuchkova L, Mykhlenko O, National Institute for Food and Nutrition Research Institute, Budapest, Hungary

OBJECTIVES: To evaluate the probability of the complex cardiovascular therapy with magnesium orotate in patients with chronic heart failure (CHF) IV functional class (NYHA IV).

METHODS: Cost-effectiveness evaluation of 2 treatment strategies was performed using the modeling “decision tree”. Data from various sources: the results of two clinical trials (Stepura O.B., Martytina A.I., Lobis A.R., J. EBO, 2009; Lobis A.R. et al., 1994) and National standard of treatment of patients with CHF FC IV were used in the modeling. Cost-effectiveness ratio was evaluated in accordance with the threshold willingness to pay for improving health achievement. The analysis of the impact of the implemented treatment strategies on the budget, taking into account the lost productivity was conducted.

RESULTS: The inclusion of magnesium orotate in the CHF standard therapy improves the health (NNT = 1/0.2, 24 = 4), it gives an additional 0.14 QALY’s and requires additional costs only. Direct medical costs were included in the cost value. Incremental cost-effectiveness ratio was $157,8 $/add. QALY. It is less than GDP per capita (current threshold willingness to pay), i.e. cardiovascular therapy with magnesium orotate is cost effective. However, taking into account the financial capacity of the health system in Ukraine, in real practice such costs for achieve better health are less acceptable than the costs of standard therapy. Indirect costs (loss productivity) during 2 years in the application of standard therapy with magnesium orotate were less than indirect costs in application only standard therapy. Saving money - 606,7 $ per patient.

CONCLUSIONS: Thus the inclusion of magnesium orotate in the standard therapy in patients with CHF is cost effective. High direct costs are compensated due in indirect costs savings.