

intervention may help reinforce health policy worldwide. **METHODS:** Using a Markov model, we performed a cost-effectiveness analysis to estimate the costs, health gains, and incremental cost-effectiveness (international dollars [I\$] per quality-adjusted life year [QALY] gained) of an exercise training program in HF class II and III NYHA patients, comparing with standard treatment, assuming a public system perspective in Brazil. QALYs were estimated from an outpatient cohort of 318 patients. Treatment efficacy was obtained from controlled trials and meta-analysis; treatment costs were derived from published data and National Health System reimbursement rates in 2008. Exercise training costs were obtained from a cardiac rehabilitation center. Robustness of results was tested by Monte Carlo simulation and sensitivity analysis. **RESULTS:** Considering a 35% reduction of mortality with exercise training and an annual cost of I\$ 1,176 per patient, this strategy had a total cumulative cost of I\$ 25,856 and 4.95 QALYs. Comparing with standard treatment, which had a total cost of I\$ 16,758 and 4.34 QALYs, the incremental cost per QALY of exercise training was I\$ 14,965. Results were sensitive to intervention-related costs and effect size. Considering the results of the HF-ACTION trial, in a time-limited exercise program with a 11% combined event (all-cause mortality or hospitalization) reduction and an exercise cost of I\$ 470 per patient, incremental cost-effectiveness ratio would be I\$ 19,828/QALY. **CONCLUSIONS:** Under several assumptions, exercise training appeared to be cost-effective, and to offer good value for money compared to other well-accepted HF treatment strategies. The results support implementing such intervention as part of public health efforts to improve HF management.

PCV93

#### **COST-EFFECTIVENESS ANALYSIS OF EZETIMIBE/SIMVASTATIN COMPARED WITH DOUBLING THE STATIN DOSE: ANALYSIS OF THE INFORCE STUDY IN THE UK**

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**OBJECTIVES:** In the INFORCE study, treatment with ezetimibe/simvastatin (Eze/Simva) 10/40 mg/day was superior to doubling the statin dose in reducing total cholesterol (TC) among inpatients with suspected coronary events already receiving a statin (stratified into 3 potency strata at baseline). The purpose of this analysis was to evaluate the cost-effectiveness of Eze/Simva in this population by translating reductions in the observed TC: high-density lipoprotein cholesterol ratio into projected lifetime costs and benefits. **METHODS:** A Markov model (Cook et al 2004) was used to project lifetime costs and benefits based on patients' cardiovascular risk factor profiles and actual lipid values at baseline and endpoint (12 weeks). Inputs for cardiovascular event costs and age-specific utilities for health states were based on a 2006 National Institute of Health and Clinical Excellence submission for Eze and age-specific non-CHD mortality rates (2006) derived from UK Office of National Statistics mortality data. **RESULTS:** At baseline, the Eze/Simva group (N = 195) had a higher mean [SD] TC (4.33 [0.89] mmol/L) than the double-statin group (N = 189; 4.16 [0.80] mmol/L). In the pooled-data analysis adjusted for baseline profile, Eze/Simva conferred 0.218 discounted (3.5%) incremental quality-adjusted life year (QALY) at a discounted (3.5%) incremental cost of £2,524, for an Incremental Cost-Effectiveness Ratio (ICER) of £11,571/QALY. Similar data were observed in each stratum of statin LDL-C-lowering potency, with ICER values <£15,000/QALY for each comparison of Eze/Simva to statins: Eze/Simva was cost-effective in the low-potency (£13,552/QALY), medium-potency (£11,930/QALY), and high-potency (£10,148/QALY) statin strata in adjusted analyses. On bootstrapping analysis, the ICER for Eze/Simva therapy was <£20,000/QALY in 99% of replicates for the adjusted analysis. **CONCLUSIONS:** Among UK inpatients evaluated for coronary events, switching to Eze/Simva 10/40 mg is projected to be a cost-effective treatment alternative (vs doubling the statin dose) based on a commonly applied UK ICER threshold (<£20,000-£30,000).

PCV94

#### **THE COST-EFFECTIVENESS OF TITRATION TO GOAL WITH BRAND ROSUVASTATIN COMPARED TO GENERIC SIMVASTATIN IN PATIENTS WITH ELEVATED LOW-DENSITY LIPOPROTEIN CHOLESTEROL: PRIMARY AND SECONDARY PREVENTION IN THE BELGIAN HEALTH CARE SETTING**

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**OBJECTIVES:** Statin dose escalation to reach low-density lipoprotein cholesterol (LDL-C) goals is an established practice. This study analyzes the health economic impact of titrating patients to a target LDL-C of 100 mg/dl as recommended by current guidelines. First-line brand rosuvastatin and first-line generic simvastatin protocols are compared. **METHODS:** A published state-transition model was used, linking age, smoking status, systolic blood pressure, and total cholesterol (TC) to fatal CVD risk using the Belgian SCORE (primary prevention) and Framingham (secondary prevention) equations. Non-fatal risk was based on landmark prevention trials. Patient LDL-C levels (mean/SD, before/after treatment start) were based on the STELLAR trial for simvastatin 20/40/80 mg and rosuvastatin 10/20/40 mg. Hence, consistent with the STELLAR trial a baseline LDL-C value (mg/dl) of (mean +/- SD) 189 +/- 19 was applied. Other patient data were based on the DISCOVERY-BELUX trial that included Belgian patients. Resource use and unit costs were based on literature and official reimbursement tariffs. Patient groups starting on either rosuvastatin (10 mg) or simvastatin (20 mg) were compared. Patients not reaching LDL-C target were switched to the next higher dose of the same statin. Simvastatin 80 mg patients not

reaching target were switched to 20 mg and if needed 40 mg of rosuvastatin. Cost-effectiveness results were reported as EUR 2009 (direct medical costs from a public payer perspective) per Life Year gained (LYg) for a time horizon of 20 years. **RESULTS:** EUR/LYg values of 56,481 and 43,884 were found for respectively primary and secondary settings, well below some of the ICER values reported for other health care interventions attracting public reimbursement. Model explorations indicated that cost-effectiveness improved for lower LDL-C targets and higher baseline patient LDL-C levels. **CONCLUSIONS:** Exclusive titration by rosuvastatin compared to starting patients first on simvastatin, is likely to be cost-effective in patients with elevated LDL-C levels both in primary and secondary prevention.

PCV95

#### **COST-EFFECTIVENESS OF CLOPIDOGREL IN ACUTE CORONARY SYNDROMES IN SOUTH KOREA**

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**OBJECTIVES:** This study aims to verify the economic feasibility of clopidogrel+aspirin combination therapy by comparing the reduction in ischemic heart disease development, and corresponding costs of aspirin monotherapy and clopidogrel+aspirin combination therapy (CT) in Korean acute coronary syndrome (ACS) patients. **METHODS:** We conducted a cost-effectiveness analysis of 3-years clopidogrel+aspirin CT in ACS patients from a social perspective, taking into account all direct medical costs, direct non-medical costs, and indirect costs that occur during the course of clopidogrel+aspirin CT and compared this to aspirin monotherapy. The effect of clopidogrel addition was applied, based on data from the Clopidogrel in Unstable angina to prevent Recurrent ischemic Events (CURE) study. The transition probability of Markov model was estimated using health insurance claim data and records in the Korean Cause of Death Registry for the years 2001-2003. **RESULTS:** The long-term Markov model analysis revealed that the effect of clopidogrel+aspirin CT compared with aspirin monotherapy in ACS patients was 0.207 life-years gained (LYG) and that the incremental cost-effectiveness ratio analyzed as incremental costs per LYG was US\$ 5,154.07. In addition, sensitivity analysis demonstrated that the relative risk and discount rate for cardiovascular events (acute myocardial infarction, stroke and cardiovascular death) were the variables that mainly affected the study results. **CONCLUSIONS:** A 38-year follow-up study of the 3-years effect of clopidogrel+aspirin CT in Korea reveals that clopidogrel CT is a cost-effective alternative to aspirin monotherapy. Additionally, these results provide an economic justification for recommending clopidogrel CT in the treatment of ACS patients within the Korean context.

PCV96

#### **COST-EFFECTIVENESS ANALYSIS OF IVABRADINE IN CHRONIC STABLE ANGINA PATIENTS IN A FINNISH SETTING**

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**OBJECTIVES:** High resting heart rate (HR) has been progressively accepted as a modifiable cardiovascular risk factor. Ivabradine is a specific HR lowering agent indicated in chronic stable angina (SA) patients with normal sinus rhythm, contraindicated or intolerant to beta-blockers. This study aimed to estimate the cost-effectiveness of ivabradine versus generic amlodipine in such patients, from the Finnish societal perspective. **METHODS:** A Markov chain Monte Carlo stochastic simulation model was used to estimate the influence of HR lowering in cardiovascular morbidity and mortality and its economic consequences. Ivabradine, 7.5 mg twice a day, was compared against amlodipine, 10 mg once a day. HR distribution was modelled as a gamma function and survival and time to hospitalization were modelled with weibull functions. **Only patients with resting HR > 70 bpm were included. Events considered** were acute myocardial infarction, stroke, heart failure and death, as well as revascularization procedures (coronary artery bypass graft and percutaneous coronary interventions). Finnish setting was considered, including only direct costs, derived from the 2006 Finnish Guidelines for Healthcare Unit Costs. **Effectiveness was measured in life years (LY) and quality-adjusted life years (QALY).** Time horizon was set at 20 years and discount rate was 5%/year for costs and effectiveness. **RESULTS:** For each 100 patients using ivabradine in comparison with amlodipine we estimate a 36 LYs (95%CI: [18;57]) or 30 QALYs (95%CI: [17;47]) gain. Annual incremental cost per patient was €226 (95%CI: [201;243]). Incremental cost-effectiveness ratios for ivabradine utilization were €12,886/LY and €15,060/QALY. **For high levels of certainty (>90%), willingness to pay for ivabradine's benefits didn't exceed €24,000,** regardless of the effectiveness measure considered. **CONCLUSIONS:** Ivabradine is a cost-effective alternative for the treatment of SA when compared to generic amlodipine in a Finnish setting of patients with contraindication or intolerance to beta-blockers and resting HR > 70 bpm.

PCV97

#### **COST-EFFECTIVENESS OF IVABRADINE IN PATIENTS WITH CHRONIC STABLE ANGINA IN A DUTCH SETTING**

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**OBJECTIVES:** High resting heart rate (HR) has been increasingly accepted as a modifiable cardiovascular risk-factor. Ivabradine has shown specific HR lowering properties and is indicated in chronic stable angina (SA) patients with normal sinus rhythm having a contraindication or intolerance for beta-blockers. The aim of this