

PCV76

THE KOREAN INDIVIDUAL-MICROSIMULATION MODEL FOR CARDIOVASCULAR HEALTH INTERVENTIONS (KIMCHI)

Liew D¹, Ko S², Kang HY³

¹The University of Melbourne, Melbourne, Victoria, Australia, ²Pfizer Korea, Seoul, South Korea, ³Yonsei University, Seoul, South Korea

OBJECTIVES: To develop an epidemiological and economic model of first-onset cardiovascular disease (CVD, comprising myocardial infarction and ischemic stroke) in Korea that can be applied to cost-effectiveness analyses of interventions. **METHODS:** KIMCHI is a Markov model with yearly cycles and the health states 'Alive without CVD', 'Alive with CVD', 'Dead from CVD' and 'Dead from non-CVD causes'. It is populated with 5270 CVD-naïve subjects aged ≥ 18 years from the 2005 Korea National Health and Nutritional Examination Survey. Annual probabilities of CVD are estimated for each individual using the Asian-specific risk equation by Wu, the covariates for which are: sex, age, total cholesterol (TC), systolic blood pressure (SBP), smoking, diabetes and body mass index (BMI). Age- and sex-specific annual probabilities of death are based on national health data. To illustrate the function of KIMCHI, follow-up was simulated of Koreans aged ≥ 55 years until death or age 99 and the cost-effectiveness of atorvastatin for the primary prevention of CVD assessed using decision analysis. The TC-reducing efficacy and cost of atorvastatin were drawn from a meta-analysis and current drug pricing schedules, respectively. CVD costs were provided by the Korean Health Insurance Review and Assessment Services. A 5% annual discount rate was applied. **RESULTS:** KIMCHI predicted that 30.4% and 18.2% of CVD-naïve Koreans currently aged ≥ 55 years will develop non-fatal and fatal CVD, respectively, by age 99. Atorvastatin was predicted to reduce these figures to 25.4% and 15.4%, corresponding to numbers needed to treat of 20 and 36 to prevent non-fatal and fatal CVD, respectively. The estimated ICERs were 21.8 million KW/YoLS and 17.4 million KW/QALY saved. **CONCLUSIONS:** KIMCHI is a contemporary epidemiological and economic model of CVD in Korea that can predict future patterns of disease and be applied to cost-effectiveness analyses of interventions that alter any of TC, SBP, smoking, diabetes and BMI.

PCV77

COST EFFECTIVENESS OF HIGH DOSE ATORVASTATIN IN ACUTE CORONARY SYNDROME PATIENTS IN THE UK

Thurston SJ¹, Thompson RP², Ong S², van Hout BA¹

¹Pharmerit Ltd, York, North Yorkshire, UK, ²Pfizer Ltd, Tadworth, Surrey, UK

OBJECTIVES: To estimate the long- and short-term costs and effects of 2 year treatment with high-dose atorvastatin (80 mg) versus medium dose simvastatin (40 mg) in patients with acute coronary syndrome (ACS) and to analyse risk levels where therapy may be expected to be cost-effective. **METHODS:** Efficacy is estimated based on a preliminary Bayesian meta-analysis linking decrease in LDL cholesterol levels to decreases in secondary cardiac events (MI, stroke, cardiovascular death) drawing data from the A to Z and PROVE-IT trials and using priors from other statin trials. The Markov model combines estimates of the occurrence of later events; UK cost data; and quality of life. A baseline risk of 12% is taken from the CURE trial, an ACS study with risks that lie between those in the international ACS registry (GRACE) and those of the two statin trials. **RESULTS:** At a 12% event risk during the first 6 months and a 4% risk during later months, and with an estimated 10% additional efficacy of high-dose atorvastatin, the estimated NNT to avoid one event is approximately 50. Costs

per life year gained and costs per QALY are estimated at below £10,000. Costs per QALY are anticipated to be over £30,000 when the 6-month risk of cardiac events is less than 1% (corresponding with a 10-year risk of >20%), or when the estimated additional risk reduction due to high-dose atorvastatin is less than 3%. **CONCLUSIONS:** Based on our preliminary findings, high-dose atorvastatin is estimated to be cost-effective in comparison to medium dose simvastatin in ACS patients. As the analysis presented here is preliminary, the results may alter following reconsideration of the priors. In addition, subsequent probabilistic analysis will be used to explore uncertainties around the estimates.

PCV78

ANEURYSM OCCLUSION IN ELDERLY PATIENTS WITH ANEURYSMAL SUBARACHNOID HAEMORRHAGE: A COST-UTILITY ANALYSIS

Koffijberg H¹, Buskens E², Rinkel G¹

¹University Medical Center Utrecht, Utrecht, The Netherlands,

²University Medical Center Groningen, University of Groningen, Groningen, The Netherlands

OBJECTIVES: To determine the balance between risks and benefits of aneurysm occlusion in elderly patients with subarachnoid haemorrhage (SAH), as function of patient characteristics and aneurysm characteristics. The analysis focused mainly on the effects of patient age, clinical condition and day of admission after SAH. **METHODS:** With Markov model Monte Carlo simulation we evaluated health gains, in quality-adjusted life years (QALY), additional costs, and incremental cost-effectiveness ratios (ICER) of aneurysm occlusion in 192 subgroups of patients. Subgroups were defined by age (70–74, 75–79, 80–84, 85+ years), neurological condition at admission (poor or good), day of admission after SAH (<4, 4–10, 11–21 days), gender, aneurysm size (<10 mm or ≥ 10 mm) and aneurysm location (anterior or posterior circulation). **RESULTS:** In patients admitted in poor condition ≥ 10 days after SAH, and patients older than 80 years, admitted in poor condition ≥ 4 days after SAH, aneurysm occlusion implied QALY loss as well as increased costs, regardless of aneurysm size and location. The ICER of occlusion was better than €50,000/QALY only in women aged 70–79 years, and men aged 70–74 years, admitted in good condition in <4 days. Occlusion was both beneficial and cost-saving in women aged 70–74 years, admitted in good condition in <4 days, with a small posterior aneurysm. **CONCLUSIONS:** Occlusion of ruptured intracranial aneurysms instead of conservative treatment improves outcome in some elderly patients, but not in all, and will often incur unacceptably high costs. The occlusion benefits of reduced risks of rebleeding and recurrent SAH only ensure the final balance is positive when patients can profit from them, in fair health, over several years. Thus, beyond some patient age, occlusion should no longer be viewed as standard treatment, but as option, viable only in patients with a prolonged life expectancy.

PCV79

ECONOMIC EVALUATION OF IRBESARTAN IN GREECE

Maniadakis N¹, Fragoulakis V², Papagiannopoulou V³, Yfantopoulou I³

¹University of Piraeus, Drosia, Greece, ²National Social Insurance

Institute, Athens, Greece, ³University of Athens, Athens, Greece

OBJECTIVES: Hypertension is a major risk factor for cardiovascular disease and a leading cause of morbidity and mortality. The present study evaluates irbesartan in relation to losartan and valsartan in the treatment of hypertension in Greece. **METHODS:** A Markov model was constructed with eight health states, including: hypertension, myocardial infarction, post-MI,