WHAT IS THE RELEVANCE OF AGE GROUPS IN SECONDARY PREVENTION OF CARDIOVASCULAR EVENTS? A COST—UTILITY ANALYSIS IN MEXICO

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OBJECTIVES: This research estimates incremental cost-utility ratios for atorvastatin, simvastatin and pravastatin for treatment of patients with hypercholesterolemia in secondary prevention and various age groups. METHODS: By using a Markov model with five final outcomes, namely angina pectoris (AP), myocardial infarction (MI), cerebrovascular disease (CVD), absence of cardiovascular events and death, the medical care cost—utility in the treatment of patients with hypercholesterolemia was estimated. The following age groups were identified: 41—50 years, 51—60 years, 61—70 years and 71—80 years. The follow-up period was ten years. A 5% discount rate was used for cost-utility analysis. The perspective was that of the National Health System. Quality-adjusted life-year estimates (QALYs) for each final outcome were obtained through a survey among cardiologists with clinical experience and life extension tables in the literature. Life years adjusted by life quality were constructed. Costs per age group and type of event were obtained by reviewing clinical records. Probabilistic sensitivity analysis was performed and acceptability curves were constructed. RESULTS: Costs and utilities vary among the various age groups. The lowest annual average medical care cost per patient corresponds to patients in the 41—50 year age group (US $33,000), and the highest among patients in the 71—80 year age group (US $101,632). The 41—50 year age group produced 5.8 QALYs being the highest, and the 71—80 year age group produced the lowest—an average of 0.5 QALYs. In all age groups, atorvastatin turned out to be the dominant treatment. CONCLUSIONS: The use of atorvastatin in Mexico is the more cost-utility treatment in secondary prevention in various age groups, but incremental cost—utility ratios among older patients are actually the highest.

COST EFFECTIVENESS OF ATORVASTATIN (LIPITOR) AS SINGLE THERAPY AND DUAL THERAPY WITH EZETIMIBE (ZETIA)

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OBJECTIVES: To determine the average and incremental cost-effectiveness of two treatment options, single therapy with atorvastatin and dual therapy with atorvastatin plus ezetimibe. METHODS: Decision analyses were used to construct the decision trees for the two therapies and three LDL cholesterol goals. Data came from NHANES III and included patient demographic variables and patient laboratory values. Analyses were done from the provider’s perspective for a period of one year. RESULTS: For the LDL cholesterol goal < 160 mg/dl, the average cost-effectiveness ratios were $959 for single therapy and $1,747 for combination therapy, with an incremental cost-effectiveness ratio of $88,171. For the LDL cholesterol goal < 130 mg/dl, the average cost-effectiveness ratios were $1,383 for single therapy and $2,324 for dual therapy, with an incremental cost-effectiveness ratio of $23,564. In the group with LDL cholesterol goal < 100 mg/dl, the average cost-effectiveness ratios were $1,195 for single therapy and $1,735 for dual therapy, with an incremental cost-effectiveness ratio of $5581. All results were robust to wide variations in costs and probabilities of effectiveness. CONCLUSION: There were no significant increased benefits to using dual therapy among patients with established LDL cholesterol treatment goals of 160 mg/dl and 130 mg/dl; therefore, single therapy with atorvastatin appears to be the dominant strategy. When the established LDL cholesterol goal is lowered to 100 mg/dl, dual therapy appears to be more cost-effective, and the increased costs required to achieve an additional successful outcome with dual therapy may be potentially considered acceptable for providers.

COST-EFFECTIVENESS OF EZETIMIBE CO-ADMINISTRATION IN CHD PATIENTS NOT AT GOAL WITH CURRENT STATIN THERAPY IN HONG KONG

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While treatment guidelines recommend lowering cholesterol to target levels appropriate for CHD patients, many remain above goal on current lipid lowering therapy and hence unable to get the maximum benefit of cholesterol reduction. For these patients, a recently published clinical trial showed that ezetimibe co-administration with existing statin therapy gets 72% of patients to NCEP II goal versus 19% among patients continuing on existing therapy. OBJECTIVE: To assess cost effectiveness of Ezetimibe 10mg (EZ10) co-administration in CHD patients not attaining goal (LDL-C > 2.59mmol/dL) while on statin therapy (atorvastatin, and simvastatin). METHOD: Decision-analytic model was developed to project lifetime costs and benefits of lipid therapy. Clinical trial data were used to estimate LDL-C reductions for different treatment strategies. Effect of lipid reductions on CHD event rates was estimated using Framingham risk equations and Hong Kong national statistics on non-CHD-related mortality. Direct costs of CHD events and prices for lipid lowering therapy in Hong Kong were used to project lifetime costs. The model was run for a population consisting of all patients on simvastatin and atorvastatin in an observational lipid lowering treatment study in Hong Kong involving patients initiated on a statin and had not reached goal at the first lipid measurement after treatment. RESULTS: Mean age of study cohort of 67 CHD patients was 64.7 (SD10.8) years and 30% were female with mean LDL-C of 3.23 mmol/L and TC of 4.85 mmol/L. EZ10 co-administered with statin compared to statin titration is projected to increase life expectancy in this patient cohort by 0.45 years with C/LY of $7387 and C/QALY of $7362. CONCLUSION: Based on the model, treatment with ezetimibe co-administered with statin for CHD patients not at goal is a cost-effective alternative to statin titration and is well below the $45,000 cost/QALY threshold commonly used in these analyses.

AN ECONOMIC ANALYSIS OF EZETIMIBE/SIMVASTATIN COMPARED TO USUAL CARE WITH STATIN MONOTHERAPY

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OBJECTIVE: This economic analysis examined the implications of using ezetimibe/simvastatin (E/S) as first-line cholesterol therapy compared to usual care with statin monotherapy,
METHODS: The analysis consisted of: 1) a comparison of the annual drug costs and percent LDL cholesterol (LDL-C) reduction for E/S and all statins (all doses); and 2) a model of a hypothetical population of 1000 untreated coronary heart disease (CHD) patients prescribed either E/S 10/20 or usual care with statin monotherapy for five years. The model examined the cost offsets or savings for E/S 10/20 compared to usual care, estimated on a per patient basis due to projected differences in cardiovascular disease (CVD) related hospitalization costs plus drug costs (wholesale acquisition costs or WAC). Sensitivity analyses included comparing E/S 10/20 with atorvastatin, and varying drug acquisition costs. Key parameters of the model were as follows: Usual care was assumed to provide LDL-C reduction based upon the market-share weighted average of the reported efficacy for each statin. A log-linear regression based on end-point trials estimated the relationship between LDL-C and CVD event rates. The cost per patient with an event was estimated to be $22,430 based upon analysis of CVD hospitalizations in managed care claims. RESULTS: First, based upon WAC, the annual drug cost per person for E/S was calculated as $842. For high-efficacy statins/doses (>40% LDL-C reduction), the annual drug costs per person were $1080 (atorvastatin), $1379 (simvastatin), and $803 (rosuvastatin). Second, compared to usual care for five years of treatment, E/S 10/20 was estimated to result in cost savings of $1568 per patient. Sensitivity analyses conducted also showed cost savings for E/S. CONCLUSION: Compared to usual care with statin monotherapy, treatment with E/S 10/20 was estimated to reduce CVD events and hospitalizations among untreated CHD patients. This is projected to result in cost savings over five years.