PCV69
A HYBRID COMPARISON OF COST-EFFECTIVENESS OF TRANSCATHETER AORTIC VALVE REPLACEMENT BETWEEN RANDOMIZED CLINICAL TRIALS AND REAL-WORLD PRACTICE IN TREATING PATIENTS WITH SEVERE AORTIC STENOSIS
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OBJECTIVES: To fill the knowledge gap of cost-effectiveness result between randomized clinical trials and real-world practice in treating patients with medically managed severe aortic stenosis, a hybrid model, using a US social perspective, was conducted. METHODS: The cost-effectiveness of Transcatheter Aortic Valve Replacement (TAVR) was compared to medical management using the 2010 PARTNER trial (Cohort B) result and 2003 Medicare claims analysis (compari- son group) with severe aortic stenosis (AS). Survival rate, quality of life, medical resource use and related hospital and physician cost were reported in the PARTNER trial. The Medicare claims analysis presented survival rate and overall cost in treating severe AS, which was converted to 2010 dollars. To calculate quality-adjusted life expectancy, and estimate the incremental cost-effectiveness, QALY for Medicare claims analysis was derived from the control arm of PARTNER trial. The effect uncertainty in model parameters was examined through one way sensitivity analysis and probabilistic sensitivity analysis (PSA). RESULTS: Over a two-year time horizon, in the base case the cost of TAVR was higher than the comparison group by $65,813. An additional 0.5 quality-adjusted life years was gained in the TAVR group. The resultant incremental cost-effectiveness ratio (ICER) was $132,155 per QALY gained for patients treated with TAVR vs. managed medically. Given $150,000 as the acceptability threshold for ICER willingness to pay, 66.4% iterations in PSA were favorable toward TAVR. CONCLUSIONS: In real-world practice it is difficult to qualify patients with rigid criteria, our result shows TAVR fell at the borderline of the cost effectiveness acceptability threshold. Although this study only considers the first two years of treatment, given the relatively short 2.1 years life expectancy of medicare managed patients with severe AS, this result highlights the importance to have a strict guideline for TAVR to ensure its cost effectiveness.

PCV70
COST-EFFECTIVENESS ANALYSIS OF ALTERNATIVE SCREENING AND TREATMENT STRATEGIES FOR FAMILIAL HYPERCHOLESTEROLEMIA IN THE UNITED STATES
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OBJECTIVES: Familial hypercholesterolemia (FH) is a genetic disease that causes build-up of low-density lipoprotein cholesterol and premature coronary heart disease. Taken regularly, statins can lower cholesterol and risk of heart attack and stroke in FH individuals and high cholesterol individuals with no FH gene mutations. However, the US FH diagnosis rate is 20% of actual cases, and patients generally have suboptimal statin adherence. Given cost-effectiveness studies evaluating generic screening for FH in Europe, similar screening strategies with adherence programs could be effective in the US. The objective of this study is to conduct a cost-effectiveness analysis of lipid cascade screening, generic cascade screening, and lipid cascade screening plus statin adherence program for FH diagnosis and treatment in terms of incremental cost-effectiveness ratios (ICERs) between strategies. METHODS: A Markov model with transition probabilities derived from published literature was used to model screening strategies. Because the model assumes an initial cohort of high cholesterol adults with a family history of FH, lipid cascade screening is the model case. US cost inputs were derived from published literature and public data. RESULTS: Generic cascade screening is dominated by base case screening, with an ICER of $53,222/QALY compared to the two. With generic cascade screening, the cost of statin adherence programs decrease the incremental costs of genetic testing, lipid cascade screening with statin adherence program is the most cost-effective strategy with an ICER of $10,705/QALY compared to the base case. At a US willingness-to-pay of $150,000/QALY, net monetary benefit analysis suggests that generic cascade screening could be cost-effective at the 10% and 20% willingness-to-pay thresholds. Conclusions: Genetic cascade screening for FH is not cost-effective in a US setting. The addition of statin adherence programs is cost-effective, but lack of US FH studies suggests a need for further analyses.

PCV71
COMPARATIVE EFFECTIVENESS AND COST-EFFECTIVENESS OF CAROTID ARTERY STENT WITH EMBOLI PROTECTION DEVICE VersUS CAROTID ENDARTERECTOMY: A RETROSPECTIVE COHORT STUDY USING NHIS CLAIMS DATABASE IN TAIWAN
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OBJECTIVES: The objectives were to compare the effectiveness and cost-effectiveness of carotid artery stent with emboli protection device (CAS+EPD) and carotid endar- terectomy (CEA). METHODS: A retrospective cohort study during 2001-2012 was built using NHIS database. Outcomes events cumulative incidence rate of death, stroke, death or stroke, and MI occurring 30 days peri-procedure, 1 year and 8 years after procedure, were analyzed as comparative effectiveness. The transitional probabilities of various outcomes were adopted from comparative effectiveness results by Weibull distribution. Kaplan Meier sample average method was applied for medical cost analysis, and discounted life expectancy by the life table estimation. RESULTS: A total of 3,359 and 543 patients were included in CAS+EPD and CEA groups. In comparative effectiveness, the incidences of safety outcomes in stroke (2.2% vs. 2.0%, 0.7% vs. 1.5%, and death or stroke (2.7% vs. 2.9% vs. 2.9%) were not statistically significant between CEA and CAS+EPD. The one-year follow-up revealed that CEA was associated with higher risks of stroke (hazard ratio: 2.72, 95%CI: 1.61-4.61) and death or stroke (HR: 2.00, 95%CI: 1.33-3.00) than CAS+EPD. Long term follow-up results demonstrated CEA had a higher risk in stroke (HR: 1.61, 95%CI: 1.09-2.37) only. The hospitalization cost were $5,600-5,500 in CAS+EPD and $4,800-6,100 in CEA, the total medical expense during the first year were $11,600 and $10,000, respectively. Life-long medical cost estimation revealed $28,700 for CAS+EPD and $31,300 for CEA. Cost-effectiveness analysis showed CAS+EPD had 0.59 life years (LYs) gained better than CEA (9.24 LYs vs. 8.65 LYs). The QALYs for CAS+EPD and CEA were 8.12 and 6.99, respectively. Overall, the result demonstrated CAS+EPD to be the dominant strategy. CONCLUSIONS: The result of probabilistic analysis showed CAS+EPD was more effective and also less expensive than CEA. Under current NH reimbursement, the CAS+EPD was a cost-effective strategy.