OBJECTIVES: To assess the cost-effectiveness of paricalcitol IV in the management of eligible hemodialysis (HD) patients with secondary hyperparathyroidism (SHPT), in comparison with standard oral vitamin D treatment. METHODS: A decision tree model was used to estimate the cost-effectiveness of paricalcitol IV for HD patients with increased serum PTH levels despite standard treatment (K/DOQI guidelines). The primary perspective of the study was that of the Dutch society in 2005. Costs and clinical outcomes were discounted at 4%. The data sources included published literature, paricalcitol IV clinical trials, official price/tariff lists and national population statistics. RESULTS: The base case analysis from the society perspective shows that paricalcitol IV generates cost savings of €1714 per patient over three years compared to standard oral vitamin D treatment (€27,817 vs. €29,531). Paricalcitol IV also saves 0.10 Life Years (2.37 vs. 2.27) and leads to a gain in 0.08 QALYs (1.07 vs. 0.99). When the analysis is performed from the health insurance perspective, the total cost savings reduce from €1,714 to €983, but paricalcitol IV remains dominant over standard oral vitamin D treatment. Potential savings in the paricalcitol IV treatment arm are to be contributed to a reduction of hospitalization. Gain in utilities is to be contributed to a decreased hospitalization rate and increased survival of the paricalcitol IV treated population. Sensitivity analysis showed that the outcomes were only moderately sensitive to the changes in input variables for the model, but paricalcitol IV remained dominant in all analyses. CONCLUSION: This study showed that paricalcitol IV is a cost-saving option in the treatment of HD patients presenting SHPT in comparison to standard oral vitamin D treatment in The Netherlands. Introduction of paricalcitol IV to the Dutch reimbursement system would propagate costs savings and a gain in life years as well as QALYs.

CE3

SHORT-TERM COST-EFFECTIVENESS OF RECOMBINANT ACTIVATED FACTOR VII IN THE TREATMENT OF INTRACEREBRAL HEMORRHAGE

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Intracerebral hemorrhage (ICH) is a devastating form of stroke, resulting in mortality and disability. A recent Phase IIb clinical trial has shown that recombinant factor VIIa (rFVIIa, NovoSeven) significantly reduces mortality in ICH patients and improves functional outcome. OBJECTIVES: To estimate short-term cost-effectiveness of rFVIIa compared to standard care in treating ICH from a US hospital (inpatient) perspective. METHODS: A decision-analytic model was developed to estimate the cost-effectiveness of rFVIIa 40 mcg/kg, 80 mcg/kg, and 160 mcg/kg compared to standard care in treating ICH from a hospital perspective. Costs and outcomes were estimated for a patient’s initial hospitalization. Mortality, disability, and initial hospital length of stay (LOS) was obtained from the Phase IIb clinical trial. Direct medical costs for initial hospitalization following ICH were assumed to include all costs associated with inpatient care estimated from an analysis of Medicare claims data. rFVIIa costs were based on average sales price. Costs were in 2005 US dollars. Sensitivity analyses were conducted to assess robustness. RESULTS: Treatment with rFVIIa 40 mcg/kg and 160 mcg/kg resulted in additional costs of $2283 and $6700 respectively compared to standard care, which includes the cost of rFVIIa, after factoring in relevant inpatient costs. Treatment with rFVIIa 80 mcg/kg was associated with a reduction in expected medical costs (~$333). Given the clinical trial results, the incremental cost-effectiveness ratio (ICER) per survivor for rFVIIa 40 mcg/kg, 80 mcg/kg, and 160 mcg/kg were $19,726, ~$178 (cost-savings), and $68,723 respectively. In addition, average costs per survivor for rFVIIa 40 mcg/kg, 80 mcg/kg, 160 mcg/kg, and standard care groups were $44,102, $41,475, $50,582 and $48,085, respectively. Results were robust to changes in model parameters. CONCLUSIONS: Treating ICH with rFVIIa 80 mcg/kg is not only cost-effective but also cost-saving to the hospital in the short-term compared to standard care. Cost-effectiveness results were driven by treatment efficacy (mortality), LOS (and corresponding inpatient costs), and rFVIIa costs.

CE4

COST EFFECTIVENESS OF DRUG ELUTING STENTS (DES) COMPARED TO BARE METAL STENTS (BMS) USING “REAL WORLD” DATA


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OBJECTIVE: To evaluate the cost-effectiveness of DES compared to BMS using outcome data derived from a cardiac patient registry in Ontario. METHODS: A decision analytic model with a 1 year time frame was used to estimate costs and effects (QALYS, revascularizations) for patients receiving DES and BMS. Prospectively collected data from the Cardiac Care Network of Ontario patient registry was used to estimate revascularization rates along with other key clinical variables to populate the model. Stent costs were obtained from manufacturers, while revascularizations costs (PCI, CABG) were obtained from a hospital in southern Ontario. Utility values applied to time with angina, post revascularization, and otherwise healthy patients were estimated using results from the ARTS trial. Parameter uncertainty was assessed by means of probabilistic sensitivity analysis. Cost-effectiveness was assessed on 22 unique patient subgroups based on diabetes status, lesion characteristics (length and diameter) and AMI within 7 days. RESULTS: Using clinical outcome data from 7953 PCI cases, the cost-effectiveness of DES was most favorable in non-post MI diabetes patients with long and narrow lesions $223,000/QALY ($9869/revascularization). This subgroup had the greatest difference in estimated 1 year revascularization rates between BMS and DES (20.6% vs. 6.0%). Cost effectiveness was found to be greater than $500,000/QALY ($20,788/revascularization) in 17 of the 22 patient cohorts (85% of patients). CONCLUSIONS: The current analysis found that the cost-effectiveness of DES to be high in all patient subgroups. The primary strength of the analysis is that revascularization rates and other key model input variables were based upon a large sample of “real world” patient data. Other published economic analyses of drug eluting and bare metal stents are at least partially based upon clinical trial data in which clinical benefits of DES are exaggerated compared to “real world” practice, thus providing more favorable, but misleading, cost-effectiveness results.

DB1/PDB37

DIABETES

(For DB1 see page A42)