HOW STABLE ARE SOCIAL PREFERENCE WEIGHTS FOR EQ-5D: RESULTS FROM A PARTIAL REPLICATION STUDY

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In 1993 a national population survey was conducted in the UK to determine social preference weights for EQ-5D health states. The survey, conducted as part of the Measurement and Valuation of Health (MVH) Project was based on face-to-face interviews with 3395 respondents who used ranking, VAS rating and time trade-off (TTO) methods to generate social preference weights. The TTO weights derived from that survey are widely used in economic studies in which EQ-5D is used to measure outcomes. OBJECTIVES: To test the stability of social preference weights over time using a partial replication protocol. METHODS: Face-to-face interviews were conducted with 253 individuals randomly selected from electoral registers in geographically convenient locations. The protocol varied somewhat from the original MVH study in that each respondent was asked to value a standard set of 17 health states. Responses were weighted to achieve matching with the age/gender mix of the MVH study. Fieldwork was conducted in 1998. RESULTS: The rank order of health states was highly similar in the two surveys. VAS ratings were well approximated in the replication survey. TTO weights were higher in the second survey, with fewer states being valued as worse than dead. The median absolute difference in TTO preference weights was 0.080. An OLS model used to interpolate values for unobserved EQ-5D health states yielded lower parameter estimates for the extreme levels on each dimension in the 1998 data. CONCLUSIONS: Social preference weights can and do vary over time. An apparent shift in the value of dead relative to EQ-5D health states may account for a reduction in the number of states assigned a negative weight. Although the absolute value of outcomes may depend upon which set of weights is used, marginal differences in outcome may remain unaffected.

DEVELOPING A PREFERENCE-BASED MEASURE FOR POSTMENOPAUSAL HEALTH

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OBJECTIVE: To develop a preference-based index for (post-) menopausal health, the latter including typical menopausal symptoms as well as potential side-effects of their causal treatment, i.e. hormone replacement therapy (HRT). METHODS: The study had three phases: 1) the development of a health state classification system; 2) a valuation survey; and 3) the estimation of a model for valuing all states defined by the system. A menopausal health state classification system with the seven dimensions (QPI-7D) was developed, including hot flushes, aching joints or muscles, anxious or frightened feelings, breast tenderness, bleeding, vaginal dryness and undesirable androgenic signs. Each dimension contains between 3 and 5 levels and defines a total of 6075 health states. A sample of 96 health states was selected for empirical valuation. These states were valued by a sample of 229 women aged 45 to 60 (37% postmenopausal, 33% on HRT), randomly selected from 6 general practice lists in Sheffield, UK. Respondents were asked to complete a time trade-off (TTO) task for 9 health states (their own plus 8 described states), resulting in an average of 16.5 values for each health state. RESULTS: Mean health state values ranged from 0.48 to 0.98. Own health was valued at 0.91 (mean). An additive random effects model of reasonable fit could be specified. Decrements for each level of symptoms reaching statistical significance were estimated. The general order of decrements (from highest to lowest) is: aching joints and muscles, bleeding, breast tenderness, anxious or frightened feelings, vaginal dryness, and androgenic signs. While “hot flushes” did reach statistical significance in the current HRT user/past sufferer subsample, it did not enhance model fit in the overall sample. CONCLUSION: This model provides a methodologically sound and credible algorithm for valuing menopausal health on the basis of the underlying health state classification system, the QPI-7D.

ACARBOSE FOR THE PREVENTION OF TYPE II DIABETES IN CANADA: AN ECONOMIC EVALUATION

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OBJECTIVE: To evaluate the cost-effectiveness of acarbose for the prevention of type II diabetes in Canadian patients with impaired glucose tolerance (IGT) compared to no treatment, metformin, and lifestyle modification. METHODS: A Markov model was developed to estimate outcomes for patients with IGT. Patients could revert to normal glucose tolerance, remain with IGT, develop diabetes, or die. Baseline transition probabilities were derived from the STOP-NIDDM study, a placebo-controlled trial of acarbose for the prevention of type II diabetes in IGT, and supplemented with data from other published trials. Direct costs were estimated for Ontario, in 2000 Canadian dollars. Patients were assumed to receive therapy for 5 years, and transitions were modeled over 10 years. Sensitivity analyses covered all inputs. Costs and outcomes were discounted at 5% per annum. RESULTS: Over a decade, 542 out of 1000 patients are expected to develop diabetes in the absence of an active
intervention. Metformin and acarbose respectively reduce cases of diabetes by 52 and 74 and reduce costs by $999 and $897 per patient. Acarbose is more effective than metformin with slightly higher costs and an incremental cost per life year gained of $1798. An aggressive lifestyle modification program is most effective, but is the most costly intervention, generating incremental costs compared to no treatment and with an incremental cost of $9988 per life year gained relative to acarbose. Results are most sensitive to effectiveness estimates for the interventions. CONCLUSIONS: These results suggest that the use of acarbose, metformin, or lifestyle modification to prevent diabetes in people with IGT is cost-effective and can even lead to cost savings. If an aggressive lifestyle modification can be implemented, it is most effective, but increases costs by over $1000 per patient relative to medical therapy. Acarbose is the better option if medication is used.

DB2

PIOGLITAZONE MONOTHERAPY IS ASSOCIATED WITH A SIGNIFICANTLY LOWER INCIDENCE OF CARDIOVASCULAR EVENTS THAN IS INSULIN THERAPY IN PATIENTS WITH TYPE 2 DIABETES: A RETROSPECTIVE PROPENSITY-ADJUSTED COHORT ANALYSIS

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OBJECTIVE: We examined cardiovascular risk by comparing pioglitazone (PIO) therapy with insulin (INS) therapy in a large database in which medical, drug, and laboratory information was collected using electronic case report forms. METHODS: Adult patients with type 2 diabetes mellitus were included if active in the database after 1999, and if no cardiovascular events were present in the history before baseline. Patients on monotherapy (PIO or INS) or in combination with sulfonylureas were included. To avoid selection bias and increase precision on the estimated treatment effect, we used propensity scoring, stratified matching methods, and logistic regression analysis. Baseline demographics and clinical characteristics such as disease duration, comorbidities, medical therapies, and treatment duration were used to calculate the propensity score. RESULTS: A total of 515 patients taking PIO alone or with sulfonylureas were compared with 2554 patients taking INS alone or in combination with sulfonylureas. The treatment period ranged from 6–36 months. The crude cardiac event rate in the PIO group was 5.44%, compared with 10.96% in the INS group (P < 0.003), and the hazard ratio was 0.499 for PIO (95% confidence interval [CI]: 0.315, 0.791; P < 0.003). When patients on monotherapy alone were compared, the crude event rates were 3.86%, compared with 11.32% in the INS group (P < 0.002), and the hazard ratio was 0.346 for PIO (95% CI: 0.172, 0.694; P < 0.003). The significant risk reduction in the PIO groups could not be explained by baseline clinical or laboratory measurements. CONCLUSION: In a retrospective propensity-matched cohort analysis in patients with type 2 diabetes, patients taking PIO had a significantly lower hazard for a cardiovascular event over a period of 6–36 months than those taking insulin.

DB3

COST-EFFECTIVENESS OF ROSIGLITAZONE-METFORMIN COMBINATION IN OVERWEIGHT PATIENTS WITH TYPE 2 DIABETES IN GERMANY

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OBJECTIVES: Guidelines in Germany recommend use of Rosiglitazone in combination with Metformin for treatment of overweight and obese patients (BMI ≥ 25) with Type 2 diabetes when Metformin monotherapy is no longer effective in maintaining glycaemic control. We assess the cost-effectiveness of this strategy compared to combination therapy with Glibenclamide. METHODS: DiDACT, an established long-term economic model of Type 2 diabetes, was adapted for clinical practice and health care financing rules in Germany. The model was calibrated using CODE-2 study data and national statistics. The perspective is that of the sickness funds, and includes all hospital care, physician consultations, medications, rehabilitation, physiotherapy, foot care and sick leave. The model was used to simulate treatment histories for a mixed incident cohort of 1000 overweight preobese patients (mean BMI = 26). Following failure of glycaemic control with Metformin alone, combination therapy adding Rosiglitazone was compared to adding Glibenclamide. The threshold for switching therapies was 7% HbA1c. In line with national guidelines, costs were discounted at 5%. RESULTS: The model predicts that adding Rosiglitazone (4mg titrated to 8mg daily) to Metformin produces better glycaemic control in most patients, and extends viability of combination therapy by 8.5 years before requiring insulin. This is projected to generate 444 additional QALYs in a cohort of 1000 newly diagnosed overweight patients over their lifetime. The additional QALYs comprise 245 (55%) from better survival and 199 (45%) from delaying insulin and reduced or delayed complications. Net cost increases are modest since additional costs of Rosiglitazone are partly offset by savings from delaying insulin therapy. After 20 years, the incremental cost-effectiveness ratio is €2730 per QALY gained ( undiscounted) or €1804 (discounted). CONCLUSIONS: Use of Rosiglitazone in combination with Metformin to improve glycaemic control and delay use of insulin in overweight patients is highly cost-effective in Germany when compared to Metformin + Glibenclamide.