Cost-utility analysis in a US setting of screening and optimized treatment of nephropathy in hypertensive patients with type-2 diabetes


OBJECTIVES: Forty percent of hypertensive type-2 diabetes patients will develop nephropathy, indicating end organ damage, increased risk of cardiovascular disease (CVD), and death. In the US, screening rates and nephropathy treatment are suboptimal. We assessed the health economic impact of nephropathy screening followed by optimal antihypertensive therapy in those who have nephropathy in the US. METHODS: A Markov/Monte Carlo model simulated lifetime impacts of screening for nephropathy using semi-quantitative urine dipsticks in a primary care setting, and subsequent addition of irbesartan 300mg to conventional antihypertensives in hypertensive type-2 diabetes patients in those patients identified as having nephropathy. Progression from no renal disease to end-stage renal disease (ESRD) was simulated. Probabilities, utilities and costs of CVD events, medications and ESRD treatment came from published sources. Number of days of ESRD avoided, quality-adjusted life years (QALYs) and direct costs were projected. Second-order Monte Carlo simulation was used to account for uncertainty in multiple parameters. Costs and QALYs were discounted three percent annually. RESULTS: Screening followed by optimized treatment led to 36,683 ± 5767 days of ESRD avoided in 1000 simulated patients, with incremental costs per QALY gained of $7315. There was a 98% probability that screening and optimized antihypertensive therapy would be considered cost-effective with a willingness to pay ≥$20,000. Sensitivity analysis showed that screening and optimized treatment would dominate “no screening” in patients ≤55 years of age. CONCLUSIONS: In hypertensive patients with type-2 diabetes, screening for albuminuria followed by optimal antihypertensive treatment is cost-effective in a US setting.

Abstracts

PDB41

Diabetic peripheral neuropathy: evaluation of the association between neuropathic symptoms (NTSS-6-SA) and health care resource use and productive losses


INTRODUCTION: Diabetes increases resource use, and complications add to costs. The purpose of this study was to characterise the association between increasing frequency and severity of the symptoms of diabetic peripheral neuropathy (SDPN), measured by the Neuropathy Total Symptom Score (NTSS)-6-SA, and health care resource use and loss of productivity. METHODS: A postal survey was mailed to subjects identified at random from hospital records as having either type-1 or type-2 diabetes using the same methods as the Health Outcomes Data Repository (HODaR). Cross-sectional, univariate and multivariate analyses were used to test for the associations in this preliminary analysis of the first 604 responses. Where appropriate, four categories were used for cross-sectional analysis based on quartiles of the NTSS-6-SA scores, Q1 being the lowest score. RESULTS: The mean age of respondents was 64 years (IQR 55–73); 58% male and the mean duration of diabetes were 14 years (IQR 5–18). 24% reported no SDPN symptoms. The mean number of days in hospital in the previous year was: Q1 = 3.4 and Q4 = 8.3. Mean number of ambulatory care in last year: Q1 = 4.4 and Q4 = 10.6. Mean contacts with a GP or nurse in the community over six months: Q1 = 6.0 and Q4 = 14.3. Mean productive days lost in the previous six months: Q1 = 35 and Q4 = 128 (note: multiple categories can occur on the same day). In multivariate analysis adjusting for age and other complications, the NTSS-6-SA score remained highly significant. Using days in hospital since 1995 as the dependent variable, there was an increase of 0.3 days per NTSS-6-SA unit (p < 0.001), and using outpatient attendances since 1997 as the dependent variable (8 years), there was an increase of 1.13 visits per unit (p < 0.001). CONCLUSIONS: There was a direct association between increase SDPN and increasing health care resource use; furthermore, increasing SDPN was associated with lost productivity.

PDB42

Improving diabetes care management across a set of comprehensive measures in a Medicaid managed care organization

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OBJECTIVES: To improve diabetic care within a Medicaid Managed Care Organization. METHODS: This is a prospective interventional, pre- and post comparison study with retrospective claims data and medical chart review. Four indicators: HbA1c, LDL-C, eye exam, and nephropathy monitoring were targeted for quality improvement interventions. A random sample of 411 diabetic members aged 18–75 years was selected using administrative and medical records. Patient demographics, past medical history, eye exam, and laboratory data were recorded using a standard form. Patient and provider interventions included: case manager phone outreach program to remind