COST-CONSEQUENCE ANALYSIS OF SCREENING AND OPTIMIZED TREATMENT OF NEPHROPATHY IN HYPERTENSIVE PATIENTS WITH TYPE-2 DIABETES IN A FRENCH SETTING

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OBJECTIVES: Type-2 diabetes patients with hypertension have a high risk of developing nephropathy, with increased risks of morbidity/mortality. Screening for, and treatment of nephropathy, is currently suboptimal in France. We assessed the long-term impact of screening for nephropathy followed by optimal antihypertensive therapy in those in which nephropathy is detected in France.

METHODS: A Markov model projected lifetime impacts of screening, identification, and appropriate treatment of nephropathy using semi-quantitative urine dipsticks in a primary care setting, followed by treatment with irbesartan 300 mg added to conventional antihypertensives in a typical cohort of hypertensive Type-2 diabetes patients. The model simulated progression from no renal disease to end-stage renal disease (ESRD). Probabilities and costs came from published sources. Cumulative incidence of ESRD, years free of ESRD, life expectancy (LE) and direct costs were projected. Second-order Monte Carlo simulation was used to account for uncertainty in multiple parameters.

RESULTS: In a cohort of 1000 patients, screening for nephropathy followed by optimal treatment reduced cumulative incidence of ESRD from (mean ± SD) 11.0 ± 1.7% to 6.5 ± 1.1%, increased number of ESRD-free years by 524 ± 80 years, increased undiscounted LE by 361 ± 60 years, and reduced costs (discounted 3% annually) by €3,340,200 ± 799,800. Sensitivity analysis showed that screening was most beneficial in younger patients. CONCLUSIONS: In hypertensive type-2 diabetes patients, screening for albuminuria followed by optimal antihypertensive treatment that includes irbesartan 300 mg, is projected to lead to substantial reductions in the incidence of ESRD, improvements in ESRD-free survival and life expectancy, and overall cost savings.

THE COST OF DIABETES MELLITUS IN SPAIN

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OBJECTIVE: To estimate the cost of diabetes mellitus (DM) in Spain by reviewing all available DM cost data. METHODS: Outstanding articles and unpublished data were identified through searches of PubMed, Spanish Medical Index, Spanish databases for doctoral thesis, Ministry of Health, Carlos III Health Institute, Spanish Health Technology Assessment Agencies, SAMFYC diabetes group, Spanish Federation of Diabetes Education Societies, and other DM sources from 1966 to November 2004. All studies with outstanding information on direct or indirect costs of DM diagnosis, treatment or complications were included (cost estimates in € of 2004). RESULTS: In total, 32 cost-of-illness (COI) studies published between 1982 and 2004 met the inclusion criteria (16.354 DM patients), 23 of them were performed with the prevalence method, 1 with the incidence method and 6 were pharmacoeconomic analyses. Total annual costs of DM in Spain would range between €685 and €2,771 million (1.6–6.4% of the Spanish public health expenditure). However, those results could underestimate the real DM cost (according to CODE-2 study, the Type-2 DM cost in Spain would be around 2.317 million € per year). The annual average cost per patient with DM would range between 1.627 and €3,982 for DM type-1 and €1.049–€5.091 for DM Type-2. The cost of hospital admissions, primary care visits and antidiabetic treatments would be 36–58%, 7–14% and 11–13% of the total cost, respectively. The indirect costs would be 28–43% of total DM costs. DM complications costs: serious hypoglycemia (€3.469), hyperglycemia (€3.357), infections (€2.703), ketoacidosis (€2.633), stroke (€4.091), ischemic cardiac disease (€3.675), neuropathy (€3.540), nephropathy (€3.525) and retinopathy (€2.109). CONCLUSIONS: The variability in the costs estimates was due to the differences of the studies design. To estimate the real cost of DM, a well designed COI prospective study is needed.

DIABETES PREVALENCE AND DIRECT MEDICAL COST ANALYSIS PER YEAR FROM 1997 TO 2001 IN TAIWAN

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OBJECTIVE: Diabetes mellitus is an important chronic disease with a growing prevalence that absorbs an ever increasing investment of resources. This study described the prevalence and the cost of diabetic care using sampling claim data from the National Health Insurance Program in Taiwan. METHOD: Five-year (1997–2001) random sampling claimed database were prepared by the National Health Research Institute, Taiwan, R.O.C. The database contains 200,000 individuals’ longitudinal medical claim data. 10.9% of Taiwan population, including outpatient and inpatient care records. Patients with the ICD-9-CM code of 250 in their primary diagnosis column were used in the analysis.

RESULT: The prevalence rate of diagnosed diabetes patients from 1997 to 2001 was 2.42%, 2.57%, 2.61%, 2.67% and 2.74%, respectively. This rate increased 12.8% in 5 years. The average total direct medical cost per patient per year increased 18%, from 10,479 NTD in 1997 to 12,811 NTD in 2001. The average number of outpatient visit increased from 7.4 in 1997 to 7.8 times in 2001. The average cost of outpatient care per patient per year increased 27%, from 7680 NTD in 1997 to 10,016 NTD in 2001. The average inpatient care cost per hospitalization increased 60%, from 29,908 NTD in 1997 to 48,071 NTD in 2001. Finally, the average total drug cost increased 31%, from 5487 NTD in 1997 to 7209 NTD in 2001. All costs did not adjust for inflation. CONCLUSION: The direct medical cost for diabetes care increased rapidly in these 5 years, the rate increased faster then the prevalence rate. The rate of drug cost increased more then that of the total medical cost. Although the representative of that sampling data needs verification, the preliminary data indicate that the outpatient expenditure increased significantly. The appropriateness of resource utilization and quality of diabetes care need more stringent management.

COST OF TYPE-2 DIABETES MELLITUS IN HONG KONG

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OBJECTIVES: Despite the recent increase in incidence and prevalence of Type-2 diabetes mellitus (T2DM) in Hong Kong, the economic impact of the disease has never been investigated. This study aims to estimate the total economic burden of a group of T2DM patients attending a public hospital in Hong Kong.