OM4

LONG-TERM COST-EFFECTIVENESS OF A DIABETES RISK SCORE IN CLINICAL PRACTICE

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OBJECTIVE: A new diabetes risk score (DRS) can accurately and precisely predict development of type 2 diabetes (T2D)and may improve patient outcome if routinely used as part of population screening for at risk patients. The DRS uses algorithms with panels of 5–9 serum biomarkers detected by an ultrasensitive molecular counting technology. We sought to evaluate the cost-effectiveness of DRS. **METHODS:** Using data from a five-year prospective validation study, we developed a ten year cost-effectiveness model of DRS. Dependent upon the subjects score, we modeled testing and treatment patterns, costs and outcomes of the fraction of the population who converted to T2D, those that did not convert and those that died. All comparisons were made to a no-testing strategy. Cost inputs including hypothetical reimbursement for the test, preventive treatment, costs of disease for T2D, preference weights and mortality were obtained from the literature. A United States health care system perspective was taken. Univariate sensitivity analyses and scenario analyses were performed. **RESULTS:** We simulated a cohort of patients over age 40 with a BMI of 25 or greater. We assumed 12.5% of tested patients would develop T2D with no intervention over five years. Annual mortality for T2D is 1.08%. Base case simulation showed that the DRS is cost effective at five years ($9000/QALY) and at ten years ($400/QALY) compared to a no-testing strategy. Sensitivity analyses suggest that the incremental cost-effectiveness ratio is most sensitive to the cost and effectiveness of preventive treatment and the pre-test risk of converting to T2D. Using DRS to identify patients at high risk was cost effective up to a reimbursement level of $1100 per test. **CONCLUSION:** Under a variety of scenarios, early prediction of type 2 diabetes with a serum biomarker panel is cost-effective given certain assumptions regarding screening efficiency and availability and effectiveness of preventive treatment.

PODIUM SESSION IV

RESEARCH IN ADHERENCE AND COMPLIANCE II

AC5

ORAL ANTIDIABETIC MEDICATION ADHERENCE AND HEALTH CARE COSTS AND UTILIZATION AMONG MEDICAID-ENROLLED TYPE 2 DIABETES PATIENTS NEWLY STARTING MONOTHERAPY

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OBJECTIVE: This study examined the association between medication adherence and health care costs and utilization in diabetes patients. Previous studies that have investigated this relationship, did not necessarily examine patients newly starting antidiabetic therapy. **METHODS:** The North Carolina Medicaid database was used to identify type 2 diabetes patients 18–64 years using at least one ICD-9 code for type 2 diabetes (250.xx, excluding type 1 diabetes codes) and one NDC code (National Drug Code) for antidiabetic medication. New starts of metformin, sulfonylureas, and thiazolidinediones, the most commonly used oral antidiabetic medications, were identified during July 1, 2001 to June 30, 2002. Adherence was measured as Medication Possession Ratio (MPR). Total annual health care costs, all-cause hospitalization and all-cause emergency department (ED) visit were examined. Linear multiple regression analysis was employed to study the effect on health care costs and logistic regression analyses for hospitalization and ED visit. **RESULTS:** Adherence to new oral antidiabetic medication was 56%. Mean total annual health care costs were $10,000. Almost 37% were hospitalized and 40% had ED visit. No association was found between medication adherence and costs. Increasing MPR by 10% was significantly associated with 6.9% decrease in likelihood of hospitalization (OR: 0.31, 95%CI: 0.23–0.41) and 5.1% decrease in likelihood of ED visit (OR: 0.49, 95% CI: 0.38–0.63). **CONCLUSION:** Increased medication adherence to newly started oral antidiabetic therapies was associated with decreased risk of health care utilization in Mediciaid-enrolled patients with type 2 diabetes. Physicians and pharmacists' active role in advising Medicaid patients on importance of pharmacotherapy, especially, for those newly starting a therapy is necessary.

AC6

ASSOCIATION OF NONCOMPLIANCE WITH DIABETES CARE GUIDELINES AND DISEASE BURDEN IN A CALIFORNIA MEDICAID TYPE 2 DIABETES MELLITUS POPULATION

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OBJECTIVE: To evaluate the prevalence of noncompliance with American Diabetes Association (ADA) guidelines for prevention and management of diabetes complications and its association with diabetes-related burden. **METHODS:** California Medicaid administrative data from 2002 through 2004 were used to identify patients ¡Ý40 years of age with a diagnosis of type 2 diabetes mellitus (T2DM) or a prescription for one anti-diabetic medication. Patients who did not have two glycosylated hemoglobin (HbA1c) tests, one eye exam, and one low-density lipoprotein-cholesterol (LDL-C) test at year 2004 were identified as noncompliant with ADA guidelines. Disease burden was defined as any inpatient or emergency room visit. Logistic regressions were used to identify factors associated with disease burden in 2004. **RESULTS:** Of 29,307 individuals who were identified as T2DM, 12,293 (42%) were noncompliant with ADA guidelines, 26,649 (91%) did not have two HbA1c tests, 13,315 (45%) did not have an eye examination, and 23,765 (81%) did not have an LDL-C test. Of the 22,699 (77%) patients who filled at least an anti-diabetic medication, only 14,659 (65%) were persistent with the medication (proportion days covered ≥0.8). A total of 6689 (23%) patients had disease burden, and 868 (3%) had diabetes-related disease burden. When compared with patients who complied with ADA guidelines, noncompliers were more like to have disease burden (OR = 1.5, 95% CI = 1.4–1.6) or diabetes-related disease burden (OR = 1.9, CI = 1.6–2.3). Other factors significantly associated with diabetes-related disease burden included male gender (OR = 1.2, CI = 1.1–1.4), race other than White and Black (OR = 1.3, CI = 1.1–1.5), no Medicare eligibility (OR = 2.1, CI = 1.7–2.5), comorbidity (OR = 1.6, CI = 1.6–1.7), and nonpersistence with anti-diabetic medication (OR = 1.4, CI = 1.2–1.7). **CONCLUSION:** Appropriate diabetes care can prevent diabetes complications and avoid increased medical cost. These California Medicaid data suggest the need to develop and evaluate intervention programs targeted at T2DM patients who are at risk for noncompliance with diabetes care, especially those with comorbidities and/or those nonpersistent with anti-diabetic medication.