PDB17

ASSOCIATION OF YOUNGER AGE WITH POOR GLYCAEMIC AND CHOLESTEROL CONTROL IN ASIANS WITH TYPE-2 DIABETES IN SINGAPORE

Toh MPHS, Wu CX, Heng BH
National Healthcare Group, Singapore

OBJECTIVES: The National Healthcare Group Polyclinics (NHGP) is a group of 9 public sector primary care clinics in Singapore. This study examines the factors associated with poor glycaemic control in Asian patients with type 2 diabetes mellitus (T2DM) in Singapore. **METHODS:** This is a cross-sectional study of patients with T2DM who attended the same clinic in 2009 for the treatment of diabetes. Demographic characteristics, medical diagnosis, clinical parameters and laboratory results were extracted from the group's Diabetes Registry (CDMS). Glycaemic (HbA1c) and cholesterol (LDL-c) control were compared with age and logistic regression analysis was applied to study the factors associated with poor glycaemic control using HbA1c cut-off at 8%. **RESULTS:** Among the 58,057 T2DM patients were more females (54%), disproportionately more Indians (13%) and fewer Chinese (71%) than the general population. Both HbA1c and LDL-c improved with age. The mean HbA1c decreased gradually from 8.16±1.74% (<40 years) to 6.94±0.99% (80+ years) while mean LDL-c dropped from 2.84±0.80 to 2.56±0.70. The Indian and Malay groups had significantly poorer glycaemic control compared to the Chinese, AdjOR 1.66 (95%CI:1.56-1.77) and 1.53 (95%CI:1.43-1.63) respectively. Other significant predictors of poor glycaemic control included the male gender (AdjOR 1.19; 95%CI 1.19:1.14-1.25), presence of maculopathy or retinopathy, peripheral vascular disease, coronary heart disease, heart failure, and being on insulin therapy (AdjOR 8.00; 95%CI:7.54-8.48). Patients with poor LDL-c (4.0+ mmol/L) were 4.2 times the odds of having poor glycaemic control (95%CI:3.78-4.66) while those with Grade 2 hypertension were 1.5 times (95%CI:1.35-1.76). **CONCLUSIONS:** Younger T2DM patients had poorer glycaemic and cholesterol control than older patients. Those with poor glycaemic control also had corresponding poorer cholesterol and blood pressure control. These patients had a higher lifetime risk of developing micro- and macro-vascular complications and should be treated much more aggressively to achieve "optimal" glycaemic and cholesterol control.

PDB18

FACTORS ASSOCIATED WITH ROUTINE PROPER MONITORING OF DIABETES CARE AMONG THE NON-INSTITUTIONALIZED POPULATION IN THE UNITED STATES: A RETROSPECTIVE ANALYSIS OF THE 2007 MEDICAL EXPENDITURE PANEL SURVEY (MEPS)

Zhao Y, Fonseca V, Shi L
Tulane University, New Orleans, LA, USA

OBJECTIVES: This study aimed to examine the rate and predictors of diabetes monitoring in the US. **METHODS:** This cross-sectional retrospective study was conducted on a representative, non-institutionalized sample of the United States population (the 2007 Household Component (HC) of the MEPS). According to the American Diabetes Association (ADA) 2007 practice guidelines, proper provider monitoring is defined as at least two A1c tests, one eye and one foot examination annually. Health status was measured by SF-12. A logistic regression model was used to examine the predictors of proper monitoring. Differences in health status and medical expenditures between patients with and without proper monitoring were examined using t-tests. Estimates were weighted to the total population (WTP). **RESULTS:** Among 1,747 (WTP: 19,320,394) patients with diabetes, 80.64% had at least two A1c tests; 63.29% had an eye examination; and 67.51% had a foot examination. Thus, 63.36% patients (WTP: 14,065,289) received proper diabetes monitoring. Older patients (OR:1.021, 95% confidence interval (CI):1.012-1.030), non-Hispanic Caucasians compared with African Americans (OR:1.236, 95% CI: 0.933-1.636), patients with a higher education level (OR:1.211, 95% CI:1.056-1.390), insurance coverage (OR:2.216, 95% CI:1.408-3.486), use of oral anti-diabetic drugs (OR:2.935, 95% CI:2.131-4.042) and insulin (OR:3.453, 95% CI:2.477-4.814) were more likely to undergo the proper monitoring. Well monitored patients had a higher SF-12 Mental Component Summary score (50.09±0.37 vs. 48.51±0.45, $p<0.05$), but a lower SF-12 Physical Component Summary score (39.95±0.34 vs. 42.28±0.47, $p<0.05$). Properly monitored patients spent significantly more on total health care services (+$5,243), outpatient visits (+$1,023), and medications (+$1,204), respectively (all p-values<0.05). **CONCLUSIONS:** In the United States, nearly 40% patients with diabetes do not receive the proper diabetes monitoring according to the ADA guidelines. In addition to racial and socioeconomic disparities, anti-diabetics/insulin use, mental health status, physical health status, and health care expenditure were associated with performing monitoring. Cost-benefit of long-term monitoring should be studied.

Diabetes/Endocrine Disorders – Cost Studies

PDB19

ECONOMIC ASSESSMENT OF CONVERSION TO INSULIN PEN DEVICES IN A LONG TERM CARE FACILITY CHAIN

Bazalo G[1], Weiss RC[2], Bouchard J[3], Perry R[4], Wendt F[5]
[1]*Managed Solutions, LLC, Conifer, CO, USA,* [2]*Managed Solutions, LLC, Randolph, NJ, USA,* [3]*Novo Nordisk, Inc., Princeton, NJ, USA,* [4]*Senior PharmaStrategies, Hudson, FL, USA,* [5]*Senior PharmaStrategies, Burleson, TX, USA*

OBJECTIVES: The objective of this study was to determine the economic impact of a pharmacy program to convert insulin utilization from multi-dose vials to pen delivery systems on a long term care facility chain. **METHODS:** Purchasing data was obtained at the patient level for basal and short acting insulins from a chain of 75 skilled nursing facilities for the 12 month period ending June 2010. Data included date dispensed, amount dispensed (mls), delivery system (pen or vial) and amount paid to the dispensing pharmacy. The insulin cost per patient-day for each month was calculated as total acquisition cost for the month divided by the number of patient-days. The insulin cost per patient-day for each stay was calculated as the total insulin acquisition cost divided by the length of stay in days. The mean cost per patient-day for each patient stay subset based on payer type, length of stay and delivery system used (pen only, vial only, pen and vial combination) was calculated. **RESULTS:** There were 2,405 inpatient stays over the 12 month period, 70% covered by Medicare and 29% by Managed Care. Two-thirds of Medicare stays and over three-fourths of managed care stays were 30 days or less. Pen device purchases increased from under 1% to almost 35% of total purchases over the study period during which the insulin cost per day declined from over $10 per patient-day to $4. The cost per day for vial-only stays ($7.84) and combination vial and pen stays ($7.79) were 72% higher than pen-only stays ($4.54), despite a 39% price premium per milliliter for pens. Differences were most marked for lengths of stay under 30 days. **CONCLUSIONS:** The increase in pen device use was associated with a marked decrease in insulin costs on a patient-day basis, particularly for lengths of stay under 30 days.

PDB20

BUDGET IMPACT ANALYSIS OF THE INTRODUCTION OF SAXAGLIPTIN IN THE TREATMENT OF TYPE-2 DIABETES IN CHILE

Elgart J[1], Caporale J[2], Aiello EC[3], Gagliardino JJ[4], Waschbusch M[3], Jotimliansky L[3], Valencia JE[5]
[1]*National University of La Plata, La Plata, Buenos Aires, Argentina,* [2]*Institute for Clinical Effectiveness and Health Policy, Buenos Aires, Argentina,* [3]*Bristol-Myers Squibb, Buenos Aires, Argentina,* [4]*CENEXA, La Plata, Buenos Aires, Argentina,* [5]*Bristol-Myers Squibb, Bogota, Colombia*

OBJECTIVES: To estimate the budget impact of Saxagliptin introduction as a treatment option for patients with type 2 diabetes mellitus (DM2) compared to the present situation. **METHODS:** An MS Excel-based budget impact model assuming coverage for one million people. The time horizon was three years and the analysis perspective was that of the public health care system in Chile. Pharmaceutical expenses of antidiabetic agents were analyzed, excluding other medical costs. The cost of antidiabetic agents was based upon list prices adjusted to co-payments, expressed in 2009 US dollars; the Saxagliptin price was considered to be equal to the sitagliptin price. The market share of the different drugs was based upon market studies and data provided by Bristol Myers Squibb. The budget impact is reported in terms of annual budget impact, per member per month (PMPM). The cost of pioglitazone and rosiglitazone related cardiovascular events, as well as that of sulphonylureas related hypoglycemia events were expressed as rates of occurrence per patient per year and cost per occurrence. **RESULTS:** The estimated net budget impact for the introduction of Saxagliptin was US$ 70,723, US$ 162,885 and US$ 251,574 for the first, second and third year respectively; the cumulative net budget impact was US$ 485,181. PMPM was US$ 0.0059, US$ 0.0136 and US$ 0.0209 each year, respectively. The cumulative impact in the total annual budget for antidiabetics represented an increase of 4.22%. **CONCLUSIONS:** The budget impact of adding Saxagliptin in a population of one million people to the public health care system in Chile is minimal in patients with DM2. The rise in pharmaceutical expenses derived from introducing Saxagliptin into the formulary is balanced by savings in terms of reduction of adverse events related to thiazolidinediones and sulfonylureas, as well of lowering of insulin requirements in an extended time horizon.

PDB21

A COST COMPARISON OF A BASAL BOLUS REGIMEN (INSULIN GLARGINE AND INSULIN GLULISINE) WITH A CONVENTIONAL PRE-MIXED INSULIN REGIMEN IN TYPE-2 DIABETES PATIENTS – THE GINGER STUDY

Tilling C[1], Vora J[2], Keech M[3]
[1]*Sanofi-Aventis, Guildford, Surrey, UK,* [2]*Royal Liverpool & Broadgreen University Hospitals, Liverpool, UK,* [3]*Pharmakos, St Albans, Hertfordshire, UK*

OBJECTIVES: This cost analysis, based on the results of the GINGER study, aimed to investigate whether an intensified insulin regimen is better value than a 2 injection per day conventional regimen. **METHODS:** GINGER was a 52 week multi-national study in 310 T2D patients on insulin for an average of 5 years with poor glycaemic control. It compared mealtime rapid-acting insulin glulisine (IGL) and insulin glargine (IG) once daily with 2 injections per day of pre-mixed insulin. Use of IGL/IG resulted in a change of HbA_{1C} from baseline to endpoint of −1.31% and −0.80% for pre-mixed insulin. Costs were calculated from a UK NHS perspective using MIMS November 2010 prices. Insulin costs were based on the use of IGL/IG (Apidra SoloStar and Lantus SoloStar) and biphasic insulin aspart (BIA, NovoMix 30 FlexPen) prefilled disposable injection devices. It was assumed that a new needle, lancet and blood glucose test strip were used for each injection with a 2U priming dose of insulin before each injection. **RESULTS:** The annual drug cost per patient on IGL/IG was higher than BIA at £692 and £612 respectively with the cost of metformin similar for both groups. The cost of needles, lancets and test strips was much lower for BIA at £329 compared with £537 for the IGL/IG group. Overall the total annual cost per patient for the IGL/IG group was £1243 compared with £957 for BIA. Over the 52 weeks the relative cost of a 1% reduction in HbA_{1C} was £949 for IGL/IG and £1197 for BIA, a 1mmol/l reduction in FPG was £518 with IGL/IG and £563 with BIA. Sensitivity analyses replacing BIA by insulin lispro or isophane insulin gave very similar results. **CONCLUSIONS:** A similar reduction in HbA_{1C} and FPG can be achieved at a relatively lower cost with IGL/IG in comparison with BIA.

PDB22

INSULIN GLARGINE PLUS OHAS VERSUS BIPHASIC INSULIN IN TYPE-2 DIABETES – A COST COMPARISON

Tilling C[1], Owens D[2], Keech M[3]