

PDB28

ECONOMIC EVALUATION OF VILDAGLIPTIN AS ADD-ON THERAPY TO METFORMIN IN DIABETES MELLITUS TREATMENT IN CHINA

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OBJECTIVES: To evaluate the cost effectiveness of vildagliptin compared to pioglitazone and glimepiride when added on to metformin in the treatment of type 2 diabetes mellitus in China. **METHODS:** A Markov model was designed to evaluate the costs and outcomes (life years and QALYs gained) of three different therapies of diabetes mellitus from health insurance perspective. Based on UKPDS Outcomes Model, the model included the following risk engine to simulate complications, including ischemic heart disease, fatal and non-fatal myocardial infarction, heart failure, stroke, blindness, renal failure, amputation, diabetes-related mortality and other deaths. The clinical and quality of life data were obtained from published literature and re-confirmed based on a questionnaire survey from a clinical expert panel of 20 diabetes specialists. The annual cost was calculated based on expert opinions. A probabilistic sensitivity analysis was performed to understand the key drivers and general sensitivity of the model. **RESULTS:** The results showed that compared to the treatment of metformin+pioglitazone and metformin+glimepiride therapy, the add-on of vildagliptin can provide a gain of 0.07 and 0.13 QALYs per patient, respectively. The lifetime cost per patient treated with vildagliptin, pioglitazone and glimepiride added-on to metformin was CNY 124,892 (US\$19,824), CNY 134,135 (US\$21,291) and CNY 126,010 (US\$20,002), respectively. **CONCLUSIONS:** Compared to metformin+pioglitazone and metformin+glimepiride therapies, vildagliptin add-on to metformin therapy improves health outcomes and also leads to cost saving in the treatment of diabetes mellitus in China.

PDB29

COST-EFFECTIVENESS MODELLING OF TYPE-1 DIABETES

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OBJECTIVES: To build a flexible and comprehensive long term Type-1 diabetes model incorporating the most up-to-date methodologies (e.g. capturing parameter uncertainty, time profile of patient characteristics and including patient behaviour) to allow a number of cost-effectiveness evaluations. **METHODS:** An individual patient level discrete event simulation model which includes all the major complications (nephropathy, neuropathy, retinopathy, CVD, PVD, hypoglycaemia, ketoacidosis) and their interactions along with the treatment effects was built based on the developed conceptual model. Patient characteristics (demographics, clinical variables, existing complications and treatment status) are used to estimate the transition probabilities for different events with HbA1c acting as the key variable in the model. Patient behaviour was also incorporated in the cost-effectiveness model by updating HbA1c and other variables in time based on the patient's behaviour. The model was developed in a flexible manner to allow alternative sets of risk equations to be used and the model is being validated for each set of risk equations. Furthermore, the model is capable of performing probabilistic sensitivity analysis allowing us to capture the effects of parameter uncertainty and report the likelihood that interventions are cost-effective. **RESULTS:** A number of cost-effective analyses were performed and the trade-offs between costs and QALYs are presented for different treatment/interventions. **CONCLUSIONS:** The flexible individual patient level discrete event simulation model developed enables cost-effectiveness evaluations of a number of treatments and interventions for Type-1 diabetes. The model allows tracking the history of each of the patients and this enables identification of different sub-groups for targeted interventions. Sensitivity analysis, probabilistic sensitivity analysis and value of information methods will be used to identify the most important parameters in the model.

DIABETES/ENDOCRINE DISORDERS - Patient-Reported Outcomes & Patient Preference Studies

PDB30

THE PREVALENCE AND BURDEN OF COMORBID HYPERTENSION AND OBESITY AMONG PATIENTS WITH TYPE 2 DIABETES IN JAPAN

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OBJECTIVES: Although hypertension and obesity are common comorbidities among patients with type 2 diabetes (T2D), their prevalence and burden has often not been explored outside the US. The objective of the current study was to assess the incremental effect of each comorbidity in isolation and in combination among T2D patients in Japan. **METHODS:** Data from the 2010 Japan National Health and Wellness Survey (NHWS) were used in the analysis. The NHWS is an internet-based self-reported survey administered to the adult population of Japan (N=25,000). Respondents who reported a diagnosis of T2D and provided weight information were included in the analysis; they were subsequently categorized based on their comorbidities: T2D+obesity only, T2D+hypertension only, T2D+obesity+hypertension, or T2D without either obesity or hypertension. Groups were compared on health status (using the SF-12v2) and self-reported health care resource use in the past six months through regression modeling controlling for demographics, health behaviors, and comorbidities. **RESULTS:** Of the 957 patients who reported a diagnosis of T2D, most reported neither an obesity nor hypertension comorbidity (n=506; 52.87%). 255 (26.65%) patients reported T2D+hypertension, 98 (10.24%) reported T2D+obesity, and 98 (10.24%) reported both T2D+hypertension+obesity. Adjusting for demographics, health behaviors, and comorbidities, patients with T2D+obesity (Mean=43.42), T2D+hypertension (Mean=46.51), and T2D+obesity+hypertension (Mean=44.03) all reported significantly worse physical component summary scores than those with

only T2D (Mean=47.76) (p<.05). Similar, though slightly weaker, differences were observed with respect to health utilities. All comorbidity groups also reported significantly more physician visits (T2D+obesity=14.25; T2D+hypertension=12.06; T2D+hypertension+obesity=15.37) in the past six months compared with those with only T2D (9.94; all ps<.05). **CONCLUSIONS:** Although most patients in Japan with T2D do not have concomitant hypertension or obesity, those that do report a significant health status and direct cost burden. Improved management of these comorbidities could result in a substantial societal benefit.

PDB31

THE PREVALENCE AND BURDEN OF COMORBID HYPERTENSION AND OBESITY AMONG PATIENTS WITH TYPE 2 DIABETES IN URBAN CHINA

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OBJECTIVES: Past research has shown strong associations of hypertension and obesity with type 2 diabetes (T2D); however, most of these studies have been conducted in the US. Given that 92 million patients in China currently have diabetes, the aim of the current study was to assess the prevalence and burden associated with these two comorbidities. **METHODS:** The data source for the current study was the 2010 China National Health and Wellness Survey (NHWS). The NHWS is a self-reported survey administered to the adult population of urban China using a mixed methodology (N=19,954). Only respondents who reported that they had been diagnosed with T2D, and who provided weight information, were included in the analysis. Those with T2D+hypertension only, T2D+obesity only, and T2D+obesity+hypertension were compared with T2D only patients on health status (using the SF-12v2) and self-reported health care resource use in the past six months. Regression modeling controlled for demographics, health behaviors, and comorbidities. **RESULTS:** A total of 552 patients reported a diagnosis of type 2 diabetes with 148 (26.81%) reporting concomitant hypertension, 52 (9.42%) being obese, 43 (7.79%) reporting hypertension and being obese, and 309 (55.98%) having neither comorbidity. Adjusting for demographics, health behaviors, and comorbidities, patients with T2D+hypertension (Mean=42.25), T2D+obesity (Mean=42.29) and T2D+obesity+hypertension (Mean=40.99) all reported significantly worse physical component summary scores than those with only T2D (Mean=44.80) (p<.05). All comorbidity groups also reported significantly worse health utilities (T2D+hypertension=0.67; T2D+obesity=0.67; T2D+hypertension+obesity=0.67) compared with those with only T2D (0.71). Similar significant effects were observed for the number of provider visits, emergency room visits, and hospitalizations. **CONCLUSIONS:** Although most patients in urban China with T2D do not have concomitant hypertension or obesity, those that do report a significant health status and direct cost burden. Improved management of T2D and these comorbidities could result in a large societal benefit.

PDB32

OUTCOMES AND PERCEPTIONS OF 4MM PEN NEEDLE USE IN DIABETES

PATIENTS: RESULTS FROM A MULTI-CENTER SURVEY PILOT STUDY IN HONG KONG

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OBJECTIVES: A recent study showed that 4mm pen needle (PN) has significantly lowered risk of intramuscular insulin injection and thus reduced risk of hypoglycemia. It is important, however, to understand whether diabetes patients are well adapted to 4mm PN when switched from longer needles. The study is to evaluate the difference in patient perception and outcomes before and after switching to the new 4mm PN. **METHODS:** A prospective pilot survey study was conducted from August 2011 to March 2012 in two public hospitals in Hong Kong. Thirty-four subjects with diabetes on longer PN (8mm, 6mm or 5mm) were randomly selected and consented to switch to 4mm PN for two to four weeks. Questionnaires included perception and outcomes Five-point Likert scales were employed to measure pain level, satisfaction level, insulin leakage, injection pressure, and ease of injection to different body areas pre- and post- switch of longer to shorter PN. Insulin leakage volume pre- and post switch was compared using a droplet size chart representing 1uL, 10uL, 20uL, and 40uL. Statistical analyses were conducted using SAS (v9.1). **RESULTS:** The overall response rate was 94.1% (N=32). Demographics of respondents: 48.9±18.6 years (13-76 years); 64.5% females; 46.7% T1DM; A1C: 8.7±1.7% (5.7-12.7%); BMI: 24.0±45.1kg/ m² (17.5-40.0kg/m²); average insulin dosage: 46.9±18.6U (6-86U). Of all analyzed, 33.3% generally injected with high speed to avoid pain. There was no significant difference in the volume of insulin leakage pre- and post PN switch when injecting on abdomen (p= 0.7530) or thigh (p=0.5637); no significant difference in level of pain (p=0.0519). **CONCLUSIONS:** The use of 4mm PN showed no difference in outcomes and perception of use when switched from 8, 6, 5 mm PN in a heterogeneous sample with obese, overweight, normal and skinny patients. A tendency of preference towards 4mm PN with lower pain level and less leakage may be observed with larger sample size.

PDB33

PHYSICIAN'S AND PATIENT'S PERCEPTIONS AND BELIEFS REGARDING INSULIN INITIATION AND USE IN PATIENTS WITH TYPE 2 DIABETES (T2DM) IN CHINA

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OBJECTIVES: To explore physician's and patient's perceptions of insulin initiation and use in patients with T2DM in China. **METHODS:** This study used the 2008 Adelphi T2DM Disease Specific Programme®, a cross-sectional study of consulting physicians and patients providing insights into 'real-world' behaviours and atti-