Abstract

Objectives: Although hypertension and obesity are common comorbidities among patients with 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 a Internet-based, self-reported survey administered to the adult population of Japan (N=25,000). A random stratified sampling framework was used to ensure the study respondents were representative of the adult population of Japan (N=25,000).

Sample

Only respondents who reported that they had been diagnosed with T2D and who provided weight information were included in the analysis.

Measures

Patients self-reported a diagnosis of T2D and hypertension (HTN). Patients also reported their height and weight which was converted to body mass index (BMI). Obesity among the Japanese population is defined by a BMI of 25 or greater.

Health outcomes included the SF-12v2 (mental and physical component summary scores), the Charlson comorbidity index (based on self-reported physician diagnoses) and health resource utilization (number of physician visits, emergency room visits, and hospitalizations in the past 6 months).

Statistical Analyses

Those with T2D+HTN+obesity were compared with T2D+HTN only, T2D+obesity only, and T2D only patients with respect to demographics and health history variables.

Regression models, controlling for age, gender, education, smoking status, exercise behavior, alcohol use, and the Charlson comorbidity index (based on self-reported physician diagnoses) were used to examine differences on these groups with respect to health outcomes.

Results

Of the 957 patients who reported a diagnosis of T2D, most reported neither an obesity nor hypertension (n=500; 52.87%). 255 (26.65%) patients reported T2D+obesity, 98 (10.24%) reported T2D+obesity, and 98 (10.24%) reported both T2D+obesity+hypertension. 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<0.05). Similar, though slightly weaker, differences were observed with respect to health utilities. All comorbidity groups also reported significantly more physician visits (T2D=42.15; T2D+hypertension=12.06; T2D+obesity+hypertension=15.37) in the past six months compared with those with only T2D (9.46; p<0.05).

Discussion

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.

References


Figure 1: Distribution of Hypertension and Obesity Comorbidities among Those with Type 2 Diabetes

Figure 2: Adjusted Health Status Summary Scores among those with Type 2 Diabetes and Hypertension Comorbidities