

## **DIABETES AND URINARY INCONTINENCE: A POPULATION BASED STUDY**

### **Aims of Study**

Diabetes is a chronic disease that effects multiple organ systems, including the urinary tract. Most of the literature reports studies focused on voiding dysfunction resulting from neurologic dysfunction but there is a paucity of information regarding urinary incontinence in the diabetic population. This study attempts to determine the prevalence of incontinence in patients with diabetes compared to non-diabetics in a large community based population of women and to examine whether the severity of diabetes is correlated with the self-reported severity of incontinence.

### **Methods**

The Health and Retirement Study is a population-based longitudinal cross sectional study. Surveys have been conducted in one to two year intervals referred to as waves, and the present study utilizes cross sectional data collected from the fifth wave in 2000. There were 11,464 women aged 28 to 107 years in wave five. For our study we included women aged 50 to 90 years for a population of 10,893 women. Incontinence was reported as mean number of days per month with incontinence episodes. Diabetes was dichotomized into severe (requiring insulin and/or presence of renal disease) and mild (requiring no medication or taking oral medication). Weighted data was used to correct for the over-sampling of certain populations and to provide prevalence data that better reflect the population in the United States regarding age, gender, race and ethnicity. Statistical analysis was performed using SAS (Cary, North Carolina) to compute percentages, means, and standard deviations with the appropriate options for survey data with individual weights. Standard errors and large sample t-tests and binomial tests for survey data were computed from the SAS data. Weighted logistic regression was used for multivariate analyses.

### **Results**

There was a higher prevalence of diabetes in the Hispanic and African American populations compared to Caucasians (both  $p < 0.001$ ). Differences between diabetics and non-diabetics were not clinically significant for age and parity, but differed in mean weight by 21.3 pounds ( $p < 0.001$ ). The prevalence of incontinence was 23.2% among non-diabetics and 31.0% among diabetics ( $p < 0.001$ ). Presence of or severity of diabetes was associated with worsening incontinence (no diabetes versus mild versus severe, all  $p < 0.001$ ). Incontinence increased with age and at all ages the prevalence of incontinence was greater for diabetics than non-diabetics ( $p < 0.001$ ). These differences persisted when adjusted for increased weight (logistic regression,  $p < 0.001$ ).

### **Conclusions**

Diabetics have a high prevalence of incontinence and severity of diabetes is associated with increasing incontinence independent of patient weight. This association supports screening all diabetics for urinary incontinence.