Objective: To compare the racial/ethnic variation in United States prediabetes prevalence estimates for alternative prediabetes definitions currently approved by the American Diabetes Association (ADA) across 20 years and in detailed multivariate comparisons.

Design: Using nationally representative National Health and Nutrition Examination Survey (NHANES) data from 1988–2008, we compared trends in the prevalence of impaired fasting glucose (IFG) and impaired glycated hemoglobin (IGH) for non-Hispanic Black, non-Hispanic White, and Mexican American/other Hispanic adults. Using NHANES 2005–2008, we compared prevalence by race/ethnicity in more detail for the three current ADA prediabetes definitions — IFG, IGH, and impaired glucose tolerance (IGT) — controlling for associated factors (education, income, weight, age, sex).

Results: Prediabetes prevalence during the last 20 years was consistently significantly lower among non-Hispanic Blacks compared to non-Hispanic Whites when measured by IFG, but was significantly higher among non-Hispanic Blacks when measured by IGH. In adjusted models, non-Hispanic Blacks were significantly more likely than non-Hispanic Whites to have IGH (OR: 2.22; 95% CI: 1.33–3.70) and less likely to have IFG (OR: 0.46; 0.30–0.73) or IGT (OR: 0.35; 0.24–0.50), but Mexican Americans/other Hispanic rates did not differ significantly from non-Hispanic White rates. However, rates of prediabetes, when defined by any of three individual diagnostic criteria, were not statistically significantly different across groups (36.8% for non-Hispanic Whites, 36.0% AA, 37.3% Mexican American/other Hispanics).

Conclusions: National prediabetes prevalence estimates vary dramatically across racial/ethnic groups according to diagnostic method, though over 35% in all three racial/ethnic groups met at least one ADA diagnostic criteria for prediabetes. (Ethn Dis. 2012;22[4]:451–458)

Key Words: Prediabetes, Minority Groups, Minority Health, Health Status Disparities

INTRODUCTION

Disparities in diabetes prevalence and related complications by race/ethnicity are well-established. Rates of diabetes are 70%–80% higher among non-Hispanic Blacks and Mexican Americans compared to non-Hispanic Whites. Blacks and Hispanics also have higher age-adjusted mortality rates for diabetes compared to Whites and carry a greater burden from many, but not all, complications.

Racial/ethnic disparities in prevalence have not been observed in population-based measures of prediabetes, a state of elevated blood glucose too high to be considered normal, yet too low for a diabetes diagnosis. Prediabetes is associated with both an increased risk of subsequent diabetes and cardiovascular events. Considering the higher rates of diabetes seen in Blacks and Hispanics compared to Whites, it is notable that similar disparities have not been reported for prediabetes.

One area that can provide insight into patterns of racial/ethnic disparities in abnormal glucose is variation in prediabetes estimates by diagnostic criteria and method. Until 2010, the presence of prediabetes was ascertained using two glucose-based diagnostic criteria: impaired fasting glucose (IFG) and/or impaired glucose tolerance (IGT). Using these criteria, similar rates of prediabetes among Whites, Blacks, and Mexican Americans were observed even in age- and weight-adjusted models. In 2010, the American Diabetes Association (ADA) introduced a new diagnostic criterion for prediabetes termed high risk of progression to diabetes. Also known as impaired glycated hemoglobin (IGH), this was measured by lab-based hemoglobin A1c (A1c) values rather than glucose.

The change was made based on clinical and practical advantages of using A1c to identify abnormal glucose states. The new criterion has implications for the surveillance of population-based trends in abnormal glucose in general and for measuring racial/ethnic disparities in abnormal glucose specifically. Studies that have quantified variation in diabetes and prediabetes classification under the new ADA A1c criteria or the similar International Expert Committee A1c criterion compared to previous glucose-based standards have found substantial racial/ethnic differences in diabetes and prediabetes rates. Of particular relevance, Blacks are more likely to be classified as having diabetes or prediabetes under the new A1c criterion compared to Whites and Hispanics.

Missing from the existing literature is a detailed understanding of how different prediabetes diagnostic criteria quantify racial/ethnic disparities in diabetes risk on a population level across...