ASSOCIATION OF BMI AND HYPERTENSION IN A HISPANIC AND NON HISPANIC WHITE POPULATION IN MIAMI, FLORIDA

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BACKGROUND

The growing global prevalence of obesity is recognized as an important risk for the development of hypertension (HTN). The association between overweight, obesity and HTN has been well documented in multiple populations but has not been reported in an ethnically diverse Hispanic population. We therefore examined the relationship between overweight, obesity and HTN in the unique Caribbean/Latin American Hispanics (H) of Miami, and compared it with the local Non Hispanic Whites (NHW).

METHODS

From 1997 - 2009, the Florida Heart Research Institute conducted free cardiovascular risk screenings to 4234 H (1522 men and 2712 women) and 1854 NHW (808 men and 1046 women). Hispanics were largely Caribbean and South American in origin; < 1% was Mexican. BMI was reported as not overweight (≤ than 24.9), overweight (25-29) and obese (≥ 30). HTN was defined as ≥ 140/90 or on HTN meds. Bivariate relationships between BMI and HTN were assessed using χ-squares. Nonlinear regression was used for odds ratios and confidence intervals. Linear regression using continuous BMI and systolic and diastolic BP produced the β and r² results.

RESULTS

BMI levels were strongly associated with hypertension in both H and NHW men and women. As BMI increased from ‘not overweight’ to ‘overweight’ to ‘obese’ the percentage of those with HTN increased significantly for both H (15.5%, 24.7%, 38.9%; p=0.001) and NHWs (20.8%, 31.7%, 40.8%; p=0.001). The same pattern was shown in both groups stratified by gender: H men 17.2%, 26.8%, 40.2%, p=.001; NHW men 27.5%, 31.2%, 44.9%, p=.001; H women 15.5%, 23.2%, 38.0%, p=.001; NHW women 17.7%, 32.2%, 36.9%, p>.001. When BMI values were regressed on diastolic and systolic BP, r² values were low, indicating that BMI explained only a small portion of the HTN variance. However the regression coefficients were robust (p for each <0.001) indicating the strength of the association.

CONCLUSIONS

BMI is a strong predictor of HTN in both H and NHW. The association progresses with increasing weight similarly in both men and women in both groups. Our results indicate that this association persists despite differences in gender and ethnicity and highlight the need to institute effective health promotion programs targeting weight control to prevent the development of HTN.