

Racial Differences in Weight Loss and Its Impact on Cardiovascular Outcomes after Bariatric Surgery in Patients with Morbid Obesity

A. Dalmar¹, M. Singh¹, R. Ullah², Z. Heis², MF. Jan³, KA. Ammar³, I. Choudhuri³, NZ. Sulemanjee³, S. Allaqaband², TY. Chua⁴, AJ. Tajik³, A. Jahangir²

¹Aurora Research Institute, Aurora Health Care, Milwaukee, United States of America; ²Center for Integrative Research on Cardiovascular Aging, Aurora Research Institute, Aurora Health Care, Milwaukee, United States of America; ³Aurora Cardiovascular Services, Aurora Sinai/Aurora St. Luke's Medical Centers, Milwaukee, United States of America; ⁴Wisconsin Bariatrics, SC, Aurora Sinai Medical Center, Milwaukee, United States of America

BACKGROUND

Weight loss after bariatric surgery in obese patients reduces adverse cardiovascular (CV) outcomes; but racial differences in the effectiveness of weight loss and its impact on CV outcomes are not defined.

OBJECTIVE

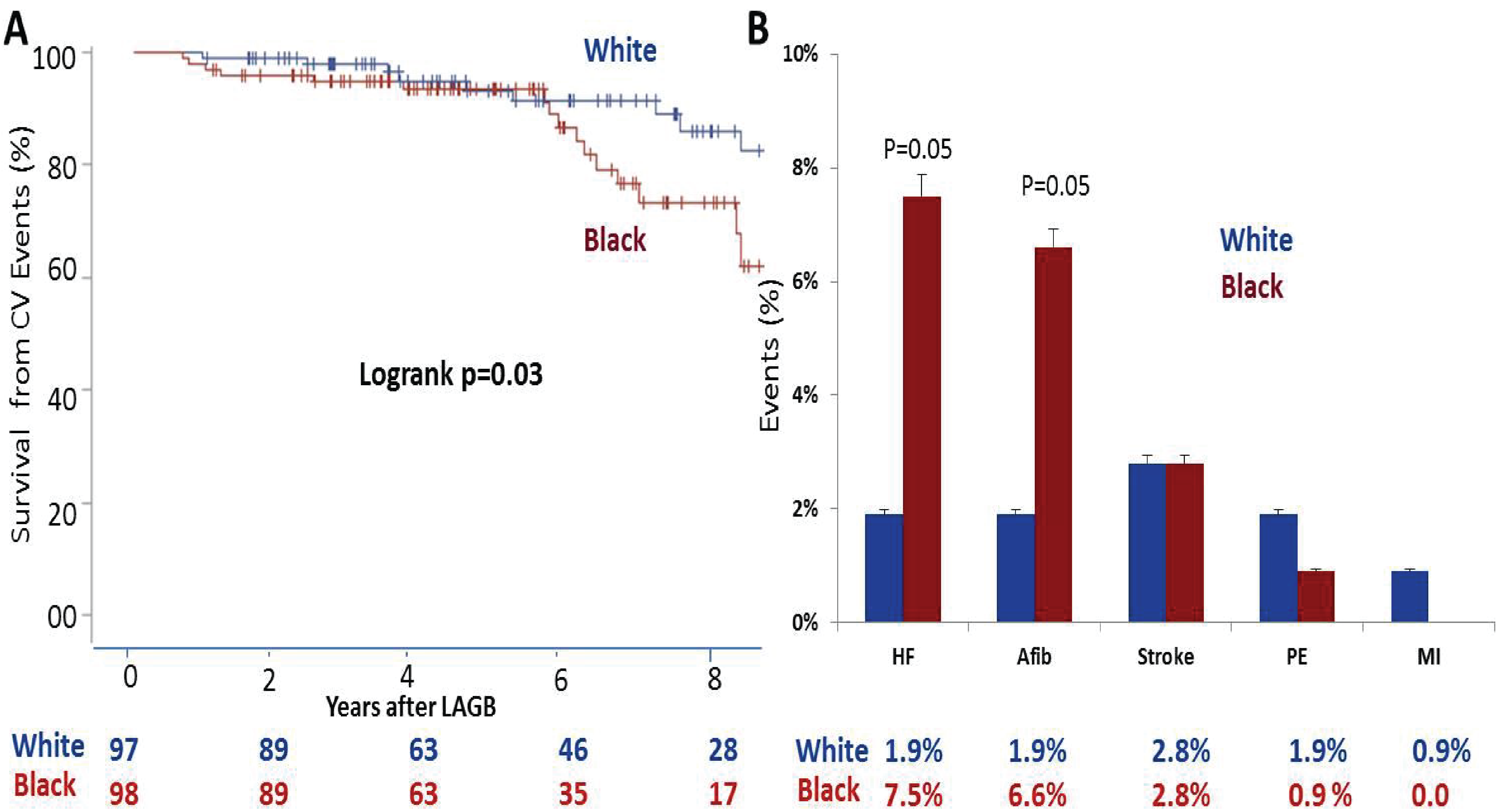
To determine differences in laparoscopic adjustable gastric banding (LAGB)-induced weight loss and its impact on long-term CV events (myocardial infarction, heart failure [HF], atrial fibrillation [AF], stroke, and pulmonary embolism) in morbidly obese white and black patients.

METHODS

Patients with morbid obesity (body mass index [BMI] ≥ 40 kg/m² or 35 kg/m² with obesity-related comorbidity) who underwent LAGB between 2001-2011 at a single institution with long-term follow-up were included. Differences in weight loss after LAGB in white and black patients and its impact on CV events were determined by Kaplan-Meier analysis, and predictors for CV outcomes were identified using Cox regression analysis.

RESULTS

Of 847 obese patients who underwent LAGB, there were 760 patients with white (587, 77%) or black racial background (173, 23%). After 1:1 propensity matching for age, BMI, hypertension, dyslipidemia, and diabetes mellitus, 212 patients (106 in each group, with mean age 44 ± 10 years, mean BMI 48 ± 8 kg/m²) were followed for CV events. Over a mean follow-up of 5.8 ± 3.0 years, both groups had significant weight loss from baseline with a reduction in BMI of 21.5% (from 51 to 40 kg/m²) in the white patient group and 19.2% (from 48.2 to 39.0 kg/m²) in the black patient group, which was not significantly different between the groups ($p=0.60$). Despite similar reduction in BMI after LAGB, the cumulative CV events were significantly higher in the black patients than the white patients (log-rank $p=0.03$, Fig A), mainly due to a higher incidence of HF (7.5% vs 1.9%, $p=0.05$) and AF (6.6% vs 1.9%, $p=0.05$) in black patients (Fig B). Black race was an independent predictor of CV events [hazard ratio (HR): 2.60, 95% CI: 1.18 - 5.69, $p<0.017$], while sex, BMI, hypertension, and diabetes were not.



CONCLUSION

Although no difference in weight loss and its maintenance after LAGB is seen between black and white patients, the likelihood of adverse CV events in the black population is higher due to a higher incidence of new onset HF and AF. Further investigation into mechanisms underlying higher predisposition to HF and AF in black patients after bariatric surgery is warranted.