

RACIAL VARIATION IN THE DISTRIBUTION OF DEMOGRAPHICS, BODY MASS, AND WEIGHT-RELATED MEDICAL CO-MORBIDITIES AMONG THE MORBIDLY OBESE: ANALYSIS OF 5,389 BOLD DATABASE PATIENTS

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Objective

The purpose of this study was to identify variations in weight, BMI, and obesity co-morbidities among the most severely overweight patients. As the obesity epidemic grows, morbidly obese patients with the highest BMI carry the greatest risk of severe weight-related medical problems. However, the effect of race on the distribution of these conditions in the morbidly obese is unknown.

Introduction

As the obesity epidemic continues to grow in America the high incidence of life-threatening, weight-related conditions complicates the surgical management of morbidly obese patients. Specifically, cardiac and respiratory problems could complicate the operative management of this patient group. While the problems obese patients present to surgeons are well documented, how these weight-related illnesses are distributed among the racial groups in the morbidly obese are unknown. Knowledge on variations by race could enable surgeons foresee complications and improve peri-operative management of this patient group. Overall, obesity co-morbidities are understood, but managing these medically complex patients remains difficult.

Methods

Data from the Surgical Review Corporation's BOLD database on 5,389 patients who were about to undergo open Roux-en-Y Gastric Bypass was analyzed retrospectively in four groups: African-American (n= 503), Caucasian (n=3,769), Hispanic (n=460), and Other (Pacific Islands, Native American, or >1 race recorded; n=652). Five Asian patients were too few to analyze. Age, weight and Body Mass Index (BMI) were compared by analysis of variance. Dichotomous variable distribution was assessed by the Chi-squared equation.

RESULTS

	BOLD BASELINE ORGB RACE				p value
	AFRICAN-AMERICAN	CAUCASIAN	HISPANIC	OTHER	
n	503	3769	460	652	
Age	41.85+10.52	47.14+11.68	39.10+9.814	46.87+13.14	<0.05
Weight (kg)	150.9+37.85	141.6+33.07	139.1+35.81	131.6+31.38	<0.05
BMI	53.21+11.23	50.22+9.677	50.81+11.32	47.52+8.786	<0.05
Sex (F/M %)	408/95	2798/971	348/112	535/117	<0.0001
CARDIOPULMONARY					
Hypertension	63.42	62.51	48.91	65.34	<0.0001
Angina	5.57	4.11	1.96	0.77	<0.0001
CHF	4.77	3.5	0.43	1.07	<0.0001
DVT/PE	3.98	4.22	4.13	0.61	0.0004
Ischemic Heart Dis	7.95	6.13	1.96	0.15	<0.0001
Peripheral Vasc Dis	1.19	1.67	2.83	0.15	0.0067
Pulmonary HBP	9.34	4.14	3.48	0.46	<0.0001
OSA	52.09	54.47	42.83	27.61	<0.0001
Obesity Hypovent	8.15	3.32	1.3	1.07	<0.0001
Asthma	20.28	21.7	23.7	11.66	<0.0001
ABDOMEN/HEPATOBIILIARY					
Abdominal Hernia	4.17	9.55	3.91	2.15	<0.0001
AbdSkinPannus S&S	8.95	9.26	3.26	3.37	<0.0001
Cholelithiasis	20.28	22.63	11.09	5.67	<0.0001
GERD	43.74	46.38	21.74	31.75	<0.0001
Liver Disease	10.34	12.97	10.22	2.15	<0.0001
StressUinaryIncont	17.3	24.14	7.39	7.98	<0.0001
METABOLIC					
Glucose metab	38.77	41.07	29.35	34.05	<0.0001
Gout	4.17	4.64	1.3	0.46	<0.0001
Lipids	31.41	45.34	15.87	27.15	<0.0001
Irregular Menses	19.09	20.32	13.48	4.45	<0.0001
PolycysticOvaryDis	2.98	4.54	2.17	1.69	0.0014
PseudotumorCereb	4.77	2.12	0.65	1.07	<0.0001
MUSCULOSKELETAL					
Back Pain	57.85	53.91	30.43	40.95	<0.0001
Fibromyalgia	2.19	4.48	0.87	1.38	<0.0001
Lower Extr Edema	35.19	31.12	8.7	6.6	<0.0001
Musculoskel	44.73	46.19	19.78	13.04	<0.0001
PSYCHOLOGICAL					
MentalHealthDiag	7.75	13.74	8.26	2.45	<0.0001
FunctStatus	8.35	6.39	3.04	2.15	<0.0001
Depression	26.04	40.33	20	8.9	<0.0001
PsychologicImpair	14.31	21.68	10	3.83	<0.0001
SOCIAL					
Alcohol Use	18.29	18.65	6.52	4.29	<0.0001
Substance Abuse	0.2	0.32	0.22	0	<0.0001
Tobacco Use	6.36	6.39	3.04	1.84	<0.0001

Conclusions

Among morbidly obese patients, severe co-morbidities can be common, and vary widely by racial classification.

- Weight and BMI are highest in African-Americans.
- Caucasians and African-Americans have highest rate of congestive heart failure and ischemic heart disease.
- Diabetes and hyperlipidemia can be seen at high rates among all racial groups, particularly African-Americans, Caucasians and Hispanics.
- Back pain and lower extremity edema are commonly elevated among African-Americans and Caucasians.

Clinical suspicion for these race-related clinical factors should be heightened in managing morbidly obese patients, as the prevalence of obesity and overweight over the last two decades has increased across the entire population. It is important to take into consideration these findings and co-morbidities when considering surgical treatment plans for the morbidly obese population; as they can have significant impact in the intra-operative, post-operative and final outcome of how patients respond. Attention to these findings may facilitate pre-surgical preparation, and could help optimize obesity outcomes.