

RACIAL VARIATION IN THE DISTRIBUTION OF DEMOGRAPHICS, BODY MASS AND WEIGHT-RELATED MEDICAL CO-MORBIDITIES AMONG THE MEGA-OBESE: ANALYSIS OF 1,673 BOLD DATABASE PATIENTS

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Background

As the obesity epidemic continues to grow in America, the high incidence of life-threatening weight-related conditions complicates the medical and surgical management of morbidly obese patients. Overall, obesity co-morbidities are understood, but managing these medically complex patients remains difficult. Logically, the heaviest morbidly obese patients with the highest BMI carry the greatest risk of severe weight-related co-morbidities. Similarly, in the general population racial and ethnic characteristics in the penetration of hypertension, type II diabetes, GERD, and other medical conditions associated with obesity have been investigated. However, the interaction of racial differences in the distribution of these conditions among the mega-obese is unknown

Objective

The purpose of this study was to identify variations between the major racial groups in America in pre-operative weight, BMI, and obesity co-morbidities among 1,673 mega-obese patients in the Surgical Review Corporation's BOLD database who presented for the Bilio-Pancreatic diversion/duodenal switch operation

Methods

Pre-operative data from the Surgical Review Corporation's BOLD database on 1,673 patients who were about to undergo duodenal switch was analyzed retrospectively in four groups: African-American (n=131), Caucasian (n=1,380), Hispanic (n=48), and Other (Pacific Islands, Native American, or >1 race recorded; n=108). Six Asian patients were too few to analyze. Continuous variables were analyzed using an ANOVA with treatment in the model. Pair-wise comparisons were performed on the least squares mean of the treatments calculated from the ANOVA model to find differences in the treatment groups. Distribution of obesity co-morbidities was examined by using a general linear model with treatment in the model and modified for a binomial distribution to account for dichotomous variables

RESULTS

	BOLD BASELINE DUODENAL SWITCH RACE				
	AFRICAN-AMERICAN	CAUCASIAN	HISPANIC	OTHER	p value
n	131	1380	48	108	
Age	40.6+9.917	45.73+11.29	41.54+11.26	41.52+11.20	<0.05
Weight (kg)	160.5+31.61	147.9+32.86	145.1+33.28	149.7+33.02	<0.05
BMI	56.64+9.529	51.54+9.461	52.85+10.70	52.04+9.296	<0.05
Sex (F/M %)	106/25	1000/380	34/14	72/36	0.14
CARDIO-PULMONARY					
Hypertension	60.31	63.99	56.25	52.78	0.0996
Angina	3.05	3.62	2.08	4.63	0.9113
CHF	6.11	4.2	2.08	2.78	0.6388
DVT/PE	3.82	3.7	2.08	5.56	0.8117
Ischemic Heart Dis	4.58	3.7	0	3.7	0.6664
Peripheral Vasc Dis	3.05	2.32	2.08	1.85	0.9667
Pulmonary HBP	6.11	13.62	14.58	5.56	0.0008
OSA	63.36	62.1	50	45.37	0.0057
Obesity Hypovent	0.76	2.25	2.08	0.93	0.0835
Asthma	21.37	23.41	16.67	24.07	0.8072
ABDOMEN/HEPATOBIILIARY					
Abdominal Hernia	11.45	11.3	6.25	0.93	0.01
AbdSkinPannus S&S	16.03	21.81	29.17	3.7	<0.0001
Cholelithiasis	12.98	22.75	20.83	21.3	0.0766
GERD	39.69	52.61	56.25	37.96	0.0031
Liver Disease	3.05	6.81	4.17	1.85	0.0863
StressUrinaryIncont	23.66	36.45	31.25	34.26	0.0491
METABOLIC					
Diabetes Mellitus	35.11	43.62	52.08	27.78	0.0023
Gout	3.05	4.86	4.17	2.78	0.7252
Lipids	28.24	46.81	52.08	33.33	<0.0001
Irregular Menses	23.66	23.73	18.75	4.63	<0.0001
PolycysticOvaryDis	4.58	8.62	2.08	0.93	0.0099
PseudotumorCereb	0	1.23	6.25	2.78	0.0166
MUSCULOSKELETAL					
Back Pain	52.67	61.09	56.25	62.96	0.2394
Fibromyalgia	2.29	5.29	4.17	5.56	0.6069
Lower Extr Edema	34.35	49.2	54.17	43.52	0.0112
Musculoskel	51.91	49.64	37.5	53.7	0.3485
PSYCHOLOGICAL					
MentalHealthDiag	6.87	13.33	2.08	3.7	0.0012
FunctStatus	8.4	7.54	4.17	2.78	0.3066
Depression	25.19	44.49	31.25	13.89	<0.0001
PsychologicImpair	12.21	17.68	8.33	4.63	0.0013
SOCIAL					
Alcohol Use	32.06	36.59	31.25	15.74	0.0003
Substance Abuse	1.53	0.72	2.08	1.85	0.5631
Tobacco Use	3.82	6.67	4.17	2.78	0.2421

Conclusions

Among mega-obese patients, severe co-morbidities are common, and vary widely by racial classification.

- ✓ Weight and BMI are highest in African-Americans.
- ✓ Caucasians and African-Americans have highest hypertension and sleep apnea.
- ✓ Diabetes and hyperlipidemia prevail among Caucasians and Hispanics.
- ✓ Depression is highest for Caucasians.
- ✓ Hispanics are unemployed at the highest rates.

Clinical index of suspicion for these racial factors should be heightened in managing extremely obese patients. Attention to these findings may facilitate pre-emptive medical management of the mega-obese and pre-surgical preparation might help optimize obesity outcomes. The combination of pre-surgical preparation and optimized obesity outcomes could be beneficial sequelae.

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