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Obesity Years: Clinical Variation by Age Pre/Post Biliopancreatic Diversion/Duodenal Switch (BPD/DS)

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Introduction: Pre-operative conditions and bariatric surgery outcomes of Medicare patients vary significantly versus other insurances, with Medicare often faring worse than others. However, since some morbidly obese Medicare insured are younger patients on disability, whether or not obesity effects vary strictly by age is unknown.

Objective: Identify clinical variation by age of pre/post BPD/DS.

Methods: Using the BOLD database, 1673 BPD/DS patients were analyzed retrospectively in 6 age groups: <30(177), 30-40(456), 40-50(486), 50-60(407), 60-70(138), >70(9). Data: Demographics, Pre-/Post-op BMI and 33 obesity co-morbidities. Statistics: ANOVA and General Linear Models including pre- and post-operative data modified for binomial distribution of dichotomous variables.

Results: Pre-op BMI varied inversely by age, from <30 (55+-10) to >70 (44+-8) $p<0.01$, as did 12 month BMI <30 (32+-6) to 60-70 (31+-5) $p<0.05$. Female/male %:<30 (76/24) to >70 (44/56) $p<0.05$, Race and health insurance (Medicaid, Medicare, Private, Self-Pay) varied widely ($p<0.0001$). Panniculitis, alcohol/substance use, asthma, obesity hypoventilation, PVD, back pain, fibromyalgia, mental health diagnosis, depression, psychological impairment, pseudotumor cerebri, irregular menses, DVT/PE did not vary by age. Gout varied directly by age and tobacco abuse varied inversely at baseline. 12 month liver disease and pulmonary hypertension varied directly by age. Hernia, cholelithiasis (Chole), CHF, impaired function (IFS), diabetes, hypertension (HTN), dyslipidemia (Lipids), lower extremity edema (LEE), somatic pain (MS pain), angina, sleep apnea (OSA), stress urinary incontinence (SUI) all varied directly by age pre-op, and their increased persistence correlated with increasing age at 12 months. In the 60-70 and >70 sets angina, MS pain, LEE and SUI increased from baseline: see Table.

Conclusion: In spite of lower pre-operative BMI in older age groups, the incidence of serious obesity co-morbidities varied directly with age among BPD/DS patients. In addition, while BMI for all age groups at 12 months after BPD/DS was clinically identical, post-operative improvement in 12 weight-related medical derangements was inversely proportional to age. Only diabetes resolved more completely among older patients. Although BOLD did not record the duration of each patient's obesity, these findings suggest the concept of "obesity years", meaning that those who have obesity the longest accumulate more co-morbidities and are less likely to resolve them than those who have obesity a shorter length of time. This advance knowledge may assist patient selection for BPD/DS. Data-informed planning could yield superior BPD/DS outcomes.