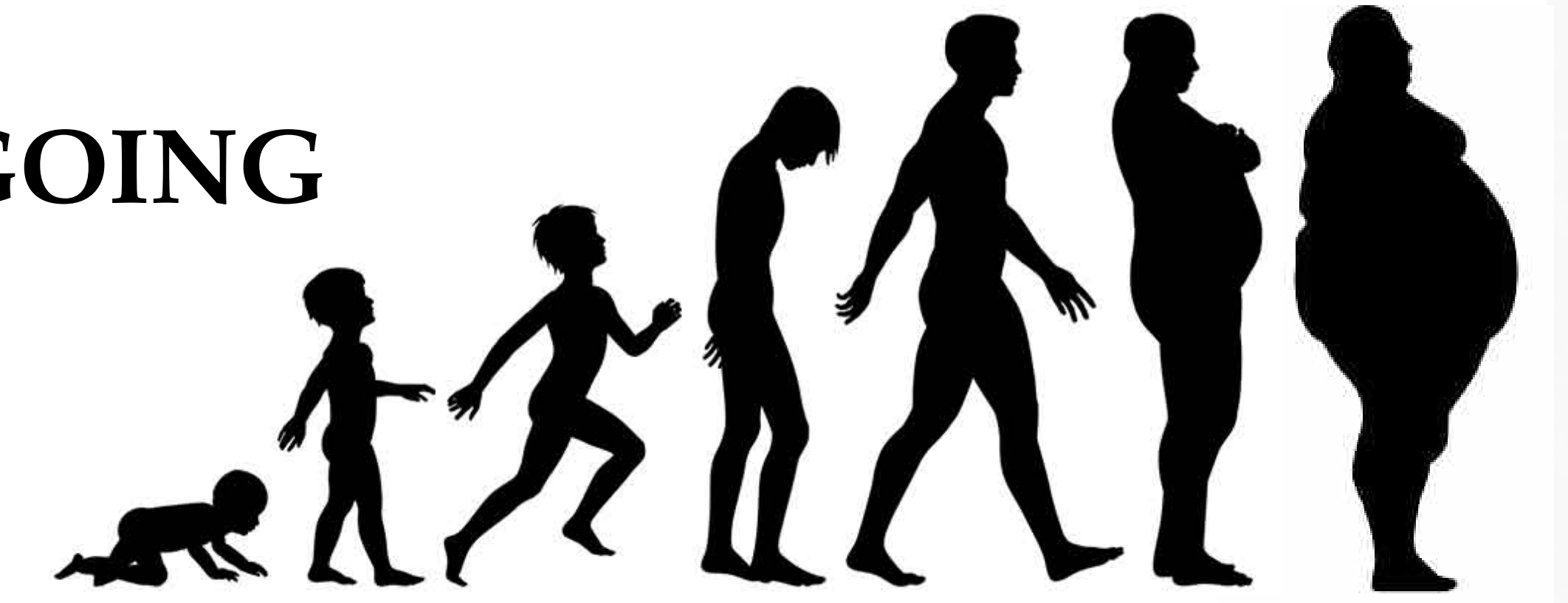




THE CONCEPT OF OBESITY YEARS: OUTCOMES VARIATION BY AGE AMONG MORBIDLY OBESE PATIENTS UNDERGOING LAPAROSCOPIC SLEEVE GASTRECTOMY

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INTRODUCTION

While results after bariatric surgery in older patients are known, a comprehensive analysis of BMI and obesity related comorbidities by age after laparoscopic sleeve gastrectomy (SG) has not been reported.

OBJECTIVE

To identify variation in post-operative BMI and resolution of obesity comorbidities along a spectrum of age groups among patients undergoing SG.

METHODS

- 8,966 Surgical Review Corporation BOLD database adult patients who underwent sleeve gastrectomy (SG)
- Six age groups: <30 (n=922), 30-40 (n=2224), 40-50 (n=2560), 50-60 (n=2322), 60-70 (n=816), and >70 (n=52).
- Retrospective analysis
- Data collected at pre-op baseline and 2, 6, 12, 18, 24, and 36 months after SG.
- Data included Body Mass Index (BMI) and 30 weight-related comorbidities
- BMI analyzed using ANOVA
- General linear model for dichotomous variables, including baseline and post-operative data modified for binomial distribution.

RESULTS

At 12 months post-SG, BMI ranged from 33±7 (60-70 years) to 35±6-17 (40-50, 50-60, >70)(p<0.01) and 35±7 to 36±9 at 24 months (p<0.05 only 30-40 v 60-70).

PULMONARY & CARDIOVASCULAR COMORBIDITIES																		
	CHF		HTN		ANGINA		LEE		PVD		PULM HTN		ASTHMA		OSA		OHS	
	12	24	12	24	12	24	12	24	12	24	12	24	12	24	12	24	12	24
<30	0.00	0.00	15.13	0.00	0.00	0.00	10.92	0.00	0.00	9.09	0.00	0.00	15.13	9.09	14.29	9.09	0.84	0.00
30-40	1.06	0.00	18.02	12.90	0.35	0.00	14.49	9.68	0.00	0.00	1.77	0.00	15.90	12.90	18.02	9.68	1.41	0.00
40-50	0.85	0.00	31.64	22.86	1.69	0.00	17.51	14.29	0.85	0.00	3.67	2.86	16.38	20.00	29.94	20.00	1.98	5.71
50-60	1.61	0.00	46.44	32.20	2.30	1.69	22.30	22.03	1.15	1.69	1.15	0.00	13.10	22.03	28.51	16.95	1.38	3.39
60-70	6.86	3.70	56.57	55.56	3.43	0.00	22.86	44.44	1.14	0.00	4.00	0.00	10.29	7.41	32.00	33.33	3.43	0.00
>70	0.00	0.00	56.25	100.00	0.00	0.00	25.00	100.00	0.00	0.00	6.25	0.00	25.00	0.00	37.50	0.00	0.00	0.00
P-VALUE	<0.0001	0.4032	<0.0001	0.0008	0.0855	0.8773	0.0126	0.0018	0.4603	0.226	0.0306	0.5921	0.2945	0.5242	<0.0001	0.2511	0.4937	0.6155

ABDOMINAL & HEPATOBILIARY COMORBIDITIES													
	ABD HERNIA		CHOLELITHIASIS		GERD		ABD PANICULITIS		LIVER DISEASE		STRESS INCONT.		
	12	24	12	24	12	24	12	24	12	24	12	24	
<30	2.52	0.00	17.65	36.36	29.41	45.45	5.04	0.00	1.68	0.00	2.52	0.00	
30-40	4.95	0.00	15.90	12.90	30.74	25.81	11.66	3.23	3.53	0.00	6.71	6.45	
40-50	7.91	8.57	22.88	25.71	33.33	40.0	9.32	8.57	4.24	2.86	15.25	5.71	
50-60	12.41	16.95	22.53	30.51	36.78	22.03	10.34	15.25	5.52	6.78	17.93	8.47	
60-70	14.86	7.41	25.14	37.04	33.71	48.15	9.71	7.41	5.14	0.00	18.86	18.52	
>70	25.0	0.00	18.75	0.00	25.0	100	6.25	0	0	0.00	18.75	0.00	
P-VALUE	<0.0001	0.1189	0.1347	0.3377	0.4814	0.0665	0.4620	0.3831	0.4248	0.4178	<0.0001	0.4043	

PSYCHOLOGICAL & BEHAVIORAL COMORBIDITIES														
	ETOH USE		DEPRESSION		MENTAL HEALTH DX		PSYCH IMPAIRMENT		SUBSTANCE ABUSE		TOBACCO USE		SUPPORT GROUP	
	12	24	12	24	12	24	12	24	12	24	12	24	12	24
<30	25.21	9.09	26.05	27.27	15.13	18.18	16.81	18.18	2.52	0.00	10.92	9.09	10.92	9.09
30-40	26.5	22.58	29.68	12.9	13.78	9.68	17.31	16.13	0.71	3.23	6.36	9.68	11.66	3.23
40-50	28.25	14.29	30.23	20.0	5.37	8.57	12.15	14.29	0.28	0.00	5.65	14.29	14.65	14.29
50-60	23.68	25.42	29.89	35.59	9.89	10.17	14.25	15.25	0.23	1.69	3.45	1.69	13.1	10.17
60-70	24.57	22.22	30.86	33.33	8.0	7.41	15.43	14.81	0.00	3.7	2.86	0.00	13.71	14.81
>70	18.75	0.00	12.5	0.00	6.25	0.00	6.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
P-VALUE	0.7357	0.7085	0.6718	0.2096	0.0032	0.9418	0.4315	0.9976	0.0377	0.883	0.0126	0.1182	0.5154	0.7012

ENDOCRINE & METABOLIC COMORBIDITIES										
	DM		GOUT		HLD		PCOS		PSEUDOTUMOR	
	12	24	12	24	12	24	12	24	12	24
<30	8.4	0.00	0.00	0.00	10.08	0.00	10.92	0.00	0.84	0.00
30-40	7.07	6.45	2.47	0.00	18.02	9.68	7.07	3.23	0.00	3.23
40-50	13.84	0.00	1.98	0.00	25.14	11.43	5.08	2.86	0.28	2.86
50-60	19.08	15.25	3.91	3.39	39.54	37.29	1.84	0.00	0.46	0.00
60-70	27.43	18.52	5.14	3.70	49.14	40.74	0.57	0.00	0.00	0.00
>70	25.0	100	6.25	0.00	37.5	100	0.00	0.00	0.00	0.00
P-VALUE	<0.0001	0.0030	0.0782	0.7336	<0.0001	0.0005	<0.0001	0.6961	0.6899	0.6961

SOMATIC COMORBIDITIES						
	BACK PAIN		FUNCTIONAL STATUS		MUSCULO-SKELETAL PAIN	
	12	24	12	24	12	24
<30	21.01	18.18	0.84	9.09	16.81	9.09
30-40	30.74	22.58	0.71	0.00	20.14	3.23
40-50	29.38	31.43	2.26	2.86	24.58	28.57
50-60	36.55	42.37	2.99	6.78	36.55	40.68
60-70	30.86	33.33	6.29	11.11	35.43	37.04
>70	37.5	100	0.00	0.00	43.75	100
P-VALUE	0.0305	0.2243	0.0066	0.4884	<0.0001	0.0016

CONCLUSION

Following SG, statistical variation by age in BMI is not clinically important.

Resolution of 12 weight-related comorbidities was inversely proportional to age at 12 months, while 4 resolved better in older patients.

Diabetes, hypertension, dyslipidemia, musculoskeletal pain and leg edema, persisted with increasing age at 24 months.

Results suggest a concept of "obesity years" in which obesity comorbidities become entrenched in older patients who were obese the longest.