

TRG response by obesity status

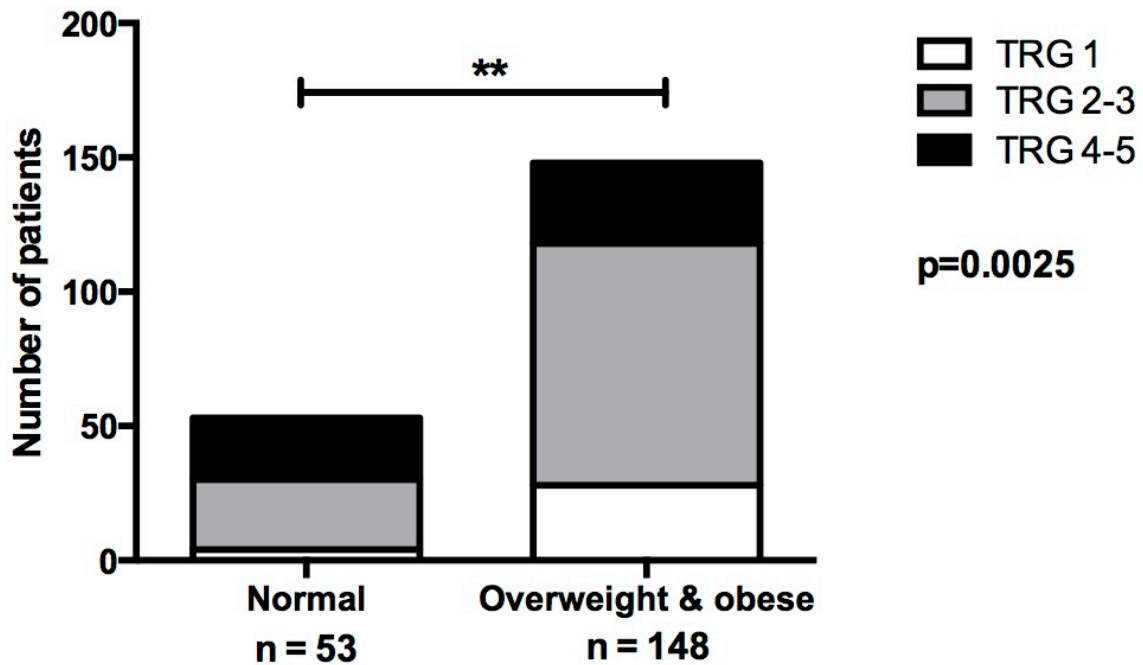


Figure S1. Comparison of normal and overweight/obese patient cohorts in terms of tumour regression grade following NA CRT. When classified according to the most recent TRG stratification, overweight/obese patients were more likely to achieve a complete (TRG 1) or partial (TRG 2-3) response following NA CRT (p=0.0025). Comparison of patient cohorts in terms of TRG was performed using χ^2 test. A p value of ≤ 0.05 was considered to be statistically significant. **p<0.01.

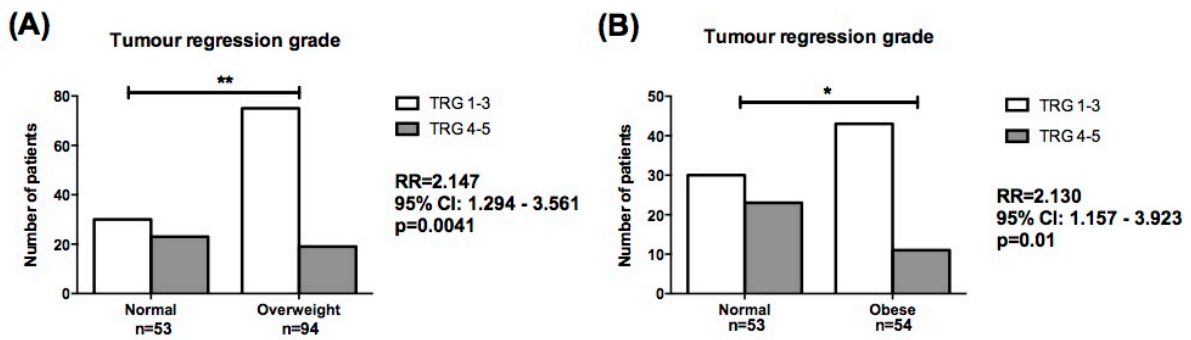


Figure S2. Normal weight patients are less likely to achieve good tumour regression grade than overweight or obese patients following NA CRT. (A) Overweight patients were more likely to achieve a good (TRG 1-3) response following NA CRT compared to normal weight patients (RR=2.147, 95% CI=1.294-3.561, p=0.0041). (B) Obese patients were more likely to achieve a good (TRG 1-3) response following NA CRT compared to normal weight patients (RR=2.130, 95% CI=1.157-3.923, p=0.01). Comparison of patient cohorts in terms of TRG was performed using χ^2 test. A p value of ≤ 0.05 was considered to be statistically significant. *p<0.05, **p<0.001

Table S1: Anthropometric data for patient ACM (Adipose conditioned media) used in clonogenic assay

Patient number	Age	Gender	BMI (kg/m ²)	WC (cm)	VFA (cm ²)
Non-Cancer					
Obese*					
Non-cancer 1	60	Female	23.0	79	94.5
Non-cancer 2	61	Female	29.4	89	212.4
Non-cancer 3	44	Female	29.1	105	264.4
Non-cancer 4	47	Female	37.3	121	236.9
Non-cancer 5	64	Female	37.9	112	
Surgery only OAC					
Nonobese					
Surgery only OAC 1	60	Female	25.4	86.0	73.7
Surgery only OAC 2	44	Male	22.4	79.0	34.1
Surgery only OAC 3	52	Male	23.5	90.0	109.0
Surgery only OAC 4	69	Female	21.5	76.0	25.2
Obese					
Surgery only OAC 5	61	Female	29.8	91.0	124.2
Surgery only OAC 6	47	Male	33.4	118.0	345.2
Surgery only OAC 7	64	Male	26.8	95.0	235.1
Surgery only OAC 8	67	Male	27.2	102.0	216.8
Surgery only OAC 9	62	Male	33.8	126.0	383.8
Surgery only OAC 10	71	Male	22.9	88.0	227.0
Surgery only OAC 11	68	Female	42.6	129.0	299.3
Surgery only OAC 12	59	Male	26.3	94.0	217.1
Surgery only OAC 13	60	Male	32.9		221.7
Surgery only OAC 14	69	Male	27.6	97.0	165.5
NA CRT OAC					
Nonobese					
NA CRT OAC 1	58	Male	20.6	80	30.8
NA CRT OAC 2	63	Male		83	34.7
NA CRT OAC 3	58	Male	28.0	74	91.0
NA CRT OAC 4	55	Male	24.4	81	120.2

Obese					
NA CRT OAC 5	76	Male	30.7	114	354.6
NA CRT OAC 6	51	Male	30.6	112	210.6
NA CRT OAC 7	72	Male	27.9	97	228.8
NA CRT OAC 8	62	Male	30.9	94	237.4
NA CRT OAC 9	69	Male	30.2	101	280.8
NA CRT OAC 10	63	Male	32.7	106	247.5

*Obesity status determined by VFA as outlined in methods, except for non-cancer patient number 5 where waist circumference was used as a proxy measure for visceral obesity as VFA was not available. Waist circumference was not available for surgery only OAC patient number 13. BMI was not available for NA CRT OAC patient number 2. BMI=Body mass index; WC=Waist circumference; VFA=Visceral fat area; OAC=Oesophageal adenocarcinoma; NA CRT OAC= Neoadjuvant chemoradiotherapy oesophageal adenocarcinoma

Table S2: Anthropometric details for comparison of ACM metabolome from non-cancer, surgery only OAC patients, and NA CRT OAC patients

		Non-cancer (n=6)	Surgery only OAC (n=6)	NA CRT OAC (n=6)	P-Value
Age at surgery	Median years (range)	64 (44-83)	61 (55-73)	66 (52-76)	NS ^a
Gender	Male/Female	2/4	4/2	4/2	NS ^b
Obesity status	BMI (kg/m ²) *	27.6 (23.8-37.3)	26.7 (22.9-33.8)	24.9 (15.4-30.7)	NS ^a
	WC (cm)*	90 (79-121)	95 (88-126)	94 (61-228.9)	NS ^a
	VFA (cm)*	212.4 (94.5-264.4)	175.6 (106.6-383.8)	43.2 (5.7-354.5)	NS ^a
<p>OAC=Oesophageal adenocarcinoma; BMI=Body mass index; WC=Waist circumference; VFA=Visceral fat area; NA CRT=Neoadjuvant Chemoradiotherapy; NS=non-significant; aAnalysis performed using 1-way ANOVA; bAnalysis performed χ^2 test; *Values given are median (range)</p>					

Table S3: Patient cohort details for ACM used in adipokine receptor gene expression *in vitro* experiments (n=10)

Patient	Age	Gender	BMI (kg/m ²)	WC (cm)	VFA (cm ²)
Nonobese*					
1	68	Male	25.0	95.0	127.5
2	58	Male			83.0
3	50	Male	23.2	94.0	87.6
4	46	Male		100.3	17.0
5	58	Male	20.6	80.0	30.8
Obese					
6	68	Male	28.8	104.0	284.8
7	72	Male	30.1	106.7	240.6
8	67	Male	27.2	102.0	216.8
9	62	Male	33.8	126.0	383.8
10	71	Male	22.9	88.0	227.0
*Obesity status determined by VFA as outlined in methods. BMI=Body mass index; WC=Waist circumference; VFA=Visceral fat area; NA CRT=Neoadjuvant chemoradiotherapy. BMI was not available for patients 2 and 4. Waist circumference was not available for patient 2					

Table S4: Clinical and pathological details for normal and overweight/obese patients

PATIENT DETAILS	NORMAL (n=53)		OVERWEIGHT & OBESE (n=148)		ALL (n=201)		P Value
DEMOGRAPHICS							
Age median (range)	61 (30-75)		62 (37-77)		61 (30-77)		0.19 ^a
Male gender	42	75%	126	85%	168	86%	0.39 ^b
ASA GRADE	n	%	n	%	n	%	
ASA Grade 1	26	49%	70	47%	96	48%	1.00 ^c
ASA Grade 2	22	42%	70	47%	92	46%	
ASA Grade 3	5	9%	8	6%	13	6%	
TUMOUR SITE	n	%	n	%	n	%	
Middle oesophagus	1	2%	2	1%	3	1%	0.44 ^d
Lower oesophagus	1	2%	3	2%	4	2%	
Oesophago-gastric junction	51	96%	143	97%	194	97%	
<i>OGJ I</i>	22		83		48		
<i>OGJ II</i>	23		53		20		
<i>OGJ III</i>	6		7		3		
CLINICAL T STAGE	n	%	n	%	n	%	
Clinical stage TiS	1	2%	1	1%	2	1%	0.47 ^c
Clinical stage T1	1	2%	3	2%	4	2%	
Clinical stage T2	6	11%	13	9%	19	10%	
Clinical stage T3	42	79%	124	84%	166	83%	
Clinical stage T4	1	2%	2	1%	3	1%	
Clinical stage Tx	2	4%	5	3%	7	3%	
PATHOLOGICAL T STAGE	n	%	n	%	n	%	
TiS	0		3	2%	3	1%	0.02^e
T0	3	6%	26	18%	29	15%	
T1	6	11%	25	17%	31	16%	
T2	5	9%	26	18%	31	16%	
T3	38	72%	63	42%	101	50%	
T4	1	2%	2	1%	3	1%	

Tx	0		3	2%	3	1%	
PATHOLOGICAL N STAGE	n	%	n	%	n	%	
N0	22	41%	77	52%	99	49%	0.20 ^f
N1	25	47%	62	42%	87	43%	
N2	4	7%	5	3%	9	5%	
N3	2	4%	2	1%	4	2%	
Nx	0		2	1%	2	1%	
ANALYSED NODES	n	%	n	%	n	%	
Median	15		17		15		0.25 ^g
Range	0-41		0-37		0-41		
RESIDUAL TUMOUR	n	%	n	%	n	%	
R0	43	81%	121	82%	164	81%	0.84 ^h
R1	10	19%	26	17%	36	18%	
R2	0		1	1%	1	1%	
TRG	n	%	n	%	n	%	
TRG 1	4	8%	28	19%	32	16%	0.002ⁱ
TRG 2	12	23%	38	26%	50	25%	
TRG 3	14	26%	52	35%	66	33%	
TRG 4	19	36%	28	19%	47	23%	
TRG 5	4	8%	2	1%	6	3%	

ASA=American society of anaesthesiologists' classification of physical health; OGJ=Oesophago-gastric junction; TRG=Tumour regression grade; Tis=In situ; Tx=Not assessed; a=Analysed by Mann Whitney U test; b=male vs. female analysed by χ^2 test; c=ASA 1 vs. ASA 2-3, analysed by χ^2 test; d=AEG vs. other site analysed by χ^2 test; e=Tis/T0-T2 vs. T3-4, analysed by χ^2 test; f=N0 vs. N1-3, analysed by χ^2 test; g=analysed by unpaired two tailed t test; h=R0 vs. R1-2, analysed by χ^2 test; i=TRG1-3 vs. TRG 4-5 analysed by χ^2 test.