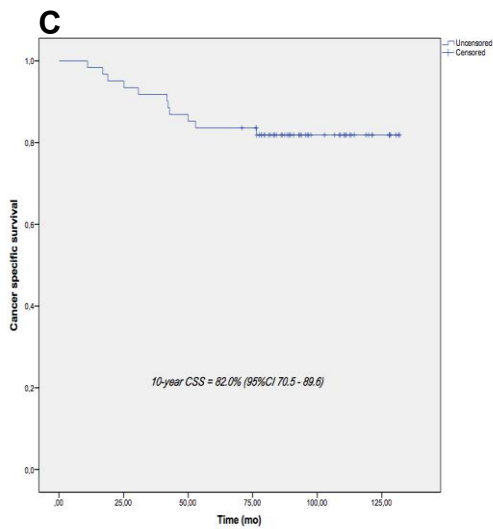
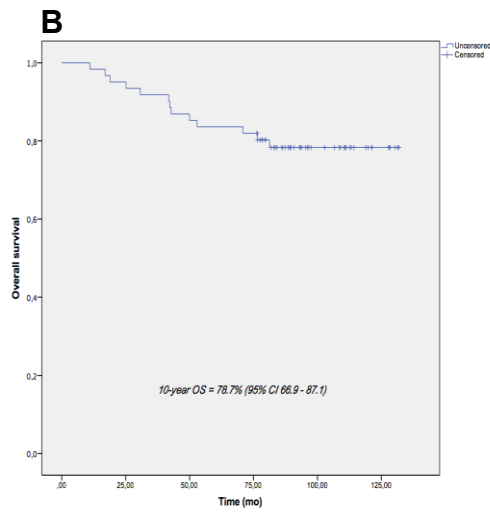
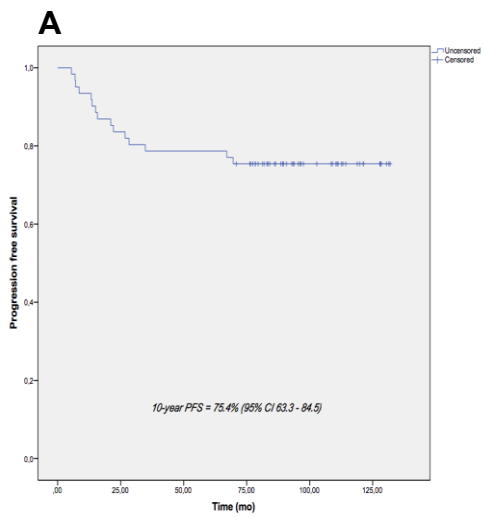
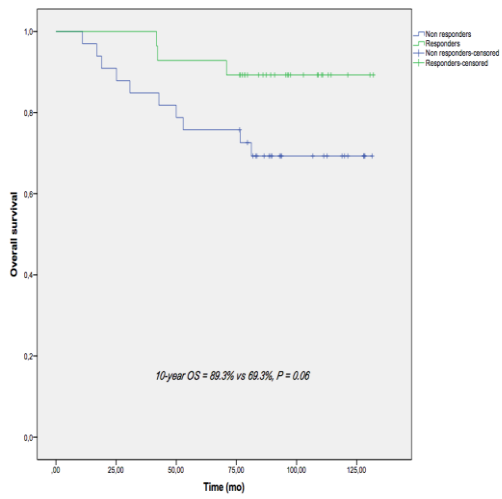


Supplemental Figure 1 ROC curve for TLG Day 11. The curve shows the accuracy of using TLG Day 11 (AUC 0.68, 95% CI 0.53-0.82; $p=0.021$) for predicting pathological tumor complete response (TRG1 vs TRG2-4). The optimal cut-off value was a TLG Day 11 of 42.3% (82.9% sensitivity, 56% specificity).



Supplemental Figure 2 Kaplan-Meier curves for Progression free survival (A), Overall survival (B) and Cancer specific survival (C).



Supplemental Figure 3 Kaplan-Meier curve for Overall survival according to metabolic response

Supplemental Table 1 Pathological findings in relation to metabolic responder,

Pathological Results*	ΔTLG-early ≥ 59.5% n=30	ΔTLG-early < 59.5% n=30	p[†] value
TRG1	20	5	
TRG2-4	10	25	0.000086
ypT0N0	16	5	
ypT1-4 or N1-2	14	25	0.003
ypT0-2	29	23	
ypT3-4	1	7	0.02
ypN0	23	19	
ypN1-2	7	11	0.26
yCRM+	0	2	
yCRM-	30	28	0.15

*one patient with tumor T4N0 refused surgery; †Chi-square test;

yCRM+= circumferential resection margin ≤ 1 mm;

yCRM-= circumferential resection margin > 1 mm;

Supplemental Table 2 Univariate and multivariate analysis of prognostic factors for OS

Variables	Univariate Analysis			Multivariate Analysis		
	HR	95% IC	P value	HR	95% IC	P value
Presurgical						
Sex (Male vs Female)	1.02	0.33 – 3.11	0.97			
Age (≤65 vs > 65)	0.88	0.29 – 2.62	0.81			
ECOG performance status (0 vs 1-2)	0.68	0.23 – 2.04	0.49			
Gunderson risk (Intermediate/Moderate vs High)	0.39	0.10 – 1.41	0.13			
Distance from the anal verge (> 5 cm vs ≤ 5 cm)	0.51	0.16 – 1.68	0.26			
Distance of Mesorectal Fascia (MRF) (> 2 mm vs ≤2 mm)	0.49	0.15 – 1.60	0.23			
Baseline CEA serum level (≤ 5 UI/L vs > 5 UI/L)	0.95	0.31 – 2.91	0.93			
ΔTLG-early % (≥ 59.5 vs < 59.5)	0.31	0.09 – 1.15	0.06			
Postsurgical						
TRG (1 vs 2-4 or M1)	0.31	0.07 – 1.44	0.11			
ypTNM (T0N0M0 vs T1-4 and/or N+ or M1)	0.44	0.09 – 2.01	0.27			

Analysis for yCRM was not done because only 2 cases had a margin positive (≤ 1 mm)