Supplementary Material

Table S1. Baseline characteristics of study population

Characteristic	Value
Age at diagnosis (years)*	Median (IQR)
	62.3 (46.7 – 69.8)
Gender	n (%)
Male	57 (51%)
Female	55 (49%)
Tumor stage	n (%)
I	9 (8%)
II	31 (28%)
III	8 (7%)
IV	64 (57%)
IPI score	n (%)
0	9 (8%)
1	33 (29%)
2	28 (25%)
3	29 (26%)
4	12 (11%)
5	1 (1%)

IQR= Interquartile range

Table S2. PET acquisition parameters of study population

Characteristic	Value
18F-FDG injected activity/weight	Median (range)
	3.3 (2.3 - 4.7) MBq/kg
Scanner	n (%)
Discovery ST	55 (49%)
Discovery 600	57 (51%)
Administration-acquisition interval	Median (range)
	66 (55 - 100) min
Frame duration (min/bed)	Median (range)
	2.5 (2 - 3.5) min/bed
Glucose Level	Median (range)
	94.3 (57 - 168) mg/dl

Table S3. Summary of Progression-Free Survival (PFS) and Overall Survival (OS) times

		N	Median follow-up (months, IQR)	Survival rate at 12 months (N*)	Survival rate at 36 months (N*)	Survival rate at 60 months (N*)
Progression	Yes	19 (17%)	34.67 (11.30-66.28)	0.83 (93)	0.73 (82)	0.73 (82)
	No	93 (83%)				
Death	Yes	19 (17%)	41.10 (18.40-68.93)	0.95 (106)	0.82 (92)	0.82 (92)
	No	93 (83%)				

IQR= Interquartile range; FU= Follow-up
*Number of patients included in each time analysis

Table S4. Sensitivity Analysis Case 1 (SUV_{max} lesion, segmentation Method-1). Univariate and multivariable Hazard Ratio (HR) with 95% Confidence Intervals (CI) for the association of continuous variables with Progression Free Survival (PFS) and Overall Survival (OS)

Variable		PFS				OS			
		Radiomic		Clinical-Radiomic		Radiomic		Clinical-Radiomic	
		HR (95% CI)	p-value	HR (95% CI)	p-value	HR (95% CI)	p-value	HR (95% CI)	p-value
SUV_{max}		0.98 (0.94, 1.01)	0.15	-	-	1.00 (0.96, 1.04)	0.92	-	-
TMTV*		1.02 (0.99, 1.04)	0.14	-	-	1.03 (1.01, 1.05)	0.01	1.01 (0.88, 1.16)	0.91
Vol(SUV_{max} lesion)*		1.02 (0.99, 1.05)	0.20	-	-	1.03 (1.00, 1.06)	0.06	0.92 (0.83, 1.02)	0.10
WTLG**		1.001 (0.997, 1.01)	0.70	-	-	1.00 (0.99, 1.01)	0.13	1.01 (0.99, 1.02)	0.54
IPI score	Low	1		1		1		1	
	High	2.61 (1.25, 5.48)	0.01	1.82 (0.84, 3.94)	0.13	10.20 (2.97, 35.01)	<0.001	6.25 (1.6, 24.2)	0.01
RS		3.42 (2.19, 5.32)	<0.001	3.11 (1.97, 4.84)	<0.001	3.17 (2.12, 4.76)	<0.001	3.42 (1.8, 6.5)	<0.001

*100 units increase (from mL to dL)

** 1000 units increase (from SUV*mL to SUV*L)

Table S5. Sensitivity Analysis Case 2 (VOL_{max} lesion, segmentation Method-2). Univariate and multivariable Hazard Ratio (HR) with 95% Confidence Intervals (CI) for the association of continuous variables with Progression Free Survival (PFS) and Overall Survival (OS)

Variable		PFS				OS			
		Radiomic		Clinical-Radiomic		Radiomic		Clinical-Radiomic	
		HR (95% CI)	p-value	HR (95% CI)	p-value	HR (95% CI)	p-value	HR (95% CI)	p-value
SUV_{max}		0.98 (0.94, 1.01)	0.15	-		1.00 (0.96, 1.04)	0.92	-	
TMTV*		1.07 (1.01, 1.13)	0.02	0.99 (0.94, 1.05)	0.82	1.09 (1.03, 1.16)	0.01	0.98 (0.91, 1.04)	0.48
Vol(VOL_{max} lesion)*		1.04 (0.98, 1.10)	0.24	-		1.05 (0.99, 1.13)	0.12	-	
WTLG**		1.00 (0.99, 1.01)	0.55	-		1.00 (0.99, 1.01)	0.11	-	
IPI score	Low	1		1		1		1	
	High	2.61 (1.25, 5.48)	0.01	2.05 (0.95, 4.44)	0.07	10.20 (2.96, 35.0)	<0.001	7.51 (2.1, 26.8)	0.002
RS		4.23 (2.66, 6.75)	<0.001	4.19 (2.54, 6.9)	<0.001	4.94 (2.67, 9.16)	<0.001	4.01 (2.0, 8.05)	<0.001

*100 units increase (from mL to dL)

** 1000 units increase (from SUV*mL to SUV*L)

Table S6. Sensitivity Analysis Case 3 (VOL_{max} lesion, segmentation Method-1). Univariate and multivariable Hazard Ratio (HR) with 95% Confidence Intervals (CI) for the association of continuous variables with Progression Free Survival (PFS) and Overall Survival (OS)

Variable		PFS				OS			
		Radiomic		Clinical-Radiomic		Radiomic		Clinical-Radiomic	
		HR (95% CI)	**p-value**	**HR (95% CI)**	**p-value**	**HR (95% CI)**	**p-value**	**HR (95% CI)**	**p-value**
SUV_{max}		0.98 (0.94, 1.01)	0.15	-		1.00 (0.96, 1.04)	0.92	-	
TMTV*		1.02 (0.99, 1.04)	0.14	-		1.03 (1.01, 1.05)	0.01	1.05 (0.94, 1.18)	0.39
Vol(VOL_{max} lesion)*		1.02 (0.99, 1.04)	0.29	-		1.03 (1.00, 1.06)	0.04	0.92 (0.81, 1.05)	0.21
WTLG**		1.00 (0.99, 1.01)	0.70	-		1.00 (0.99, 1.01)	0.13	-	
IPI score	Low	1		1		1		1	
	High	2.61 (1.25, 5.48)	0.01	1.71 (0.7, 3.7)	0.17	10.20 (2.9, 35.0)	<0.001	6.76 (1.8, 25.38)	0.01
RS		3.62 (2.43, 5.38)	<0.001	3.36 (2.2, 5.0)	<0.001	4.18 (2.33, 7.49)	<0.001	3.64 (1.77, 7.49)	<0.001

*100 units increase (from mL to dL)

** 1000 units increase (from SUV*mL to SUV*L)

Figure S1. Elastic Net Cox model average coefficients (among 500 repetitions of the model based on a bootstrap resampling) for prediction of a: PFS and b: OS according to RFs extracted from "SUV_{max} lesion" segmented with Method-1. Only coefficients larger than 1.00 are represented.

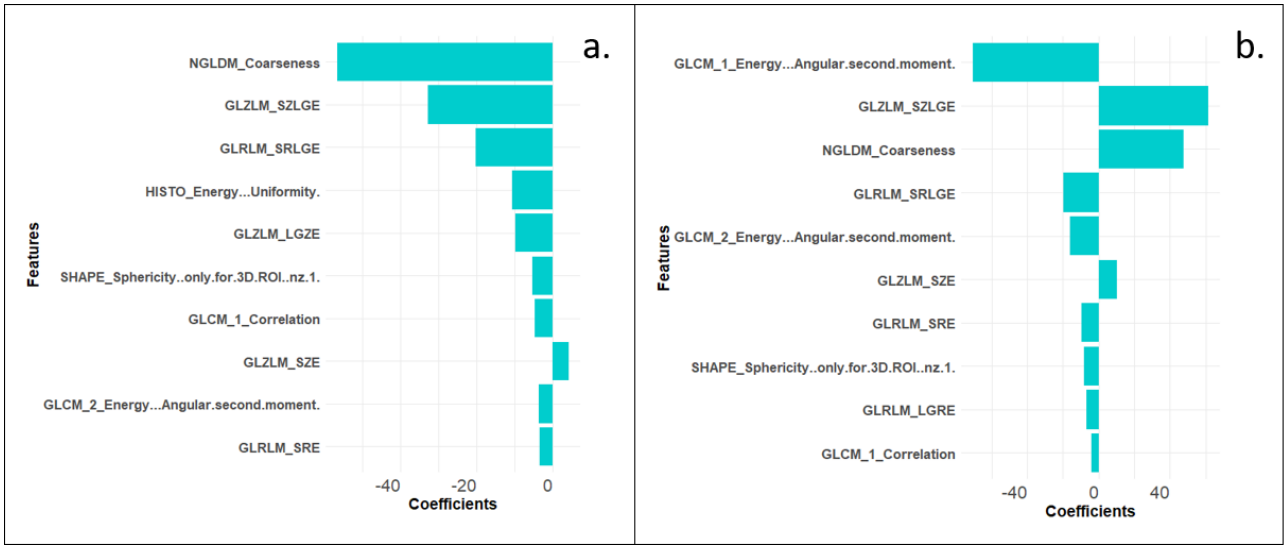


Figure S2. Elastic Net Cox model average coefficients (among 500 repetitions of the model based on a bootstrap resampling) for prediction of a: PFS and b: OS according to RFs extracted from "VOL_{max} lesion" segmented with Method-2. Only coefficients larger than 1.00 are represented.

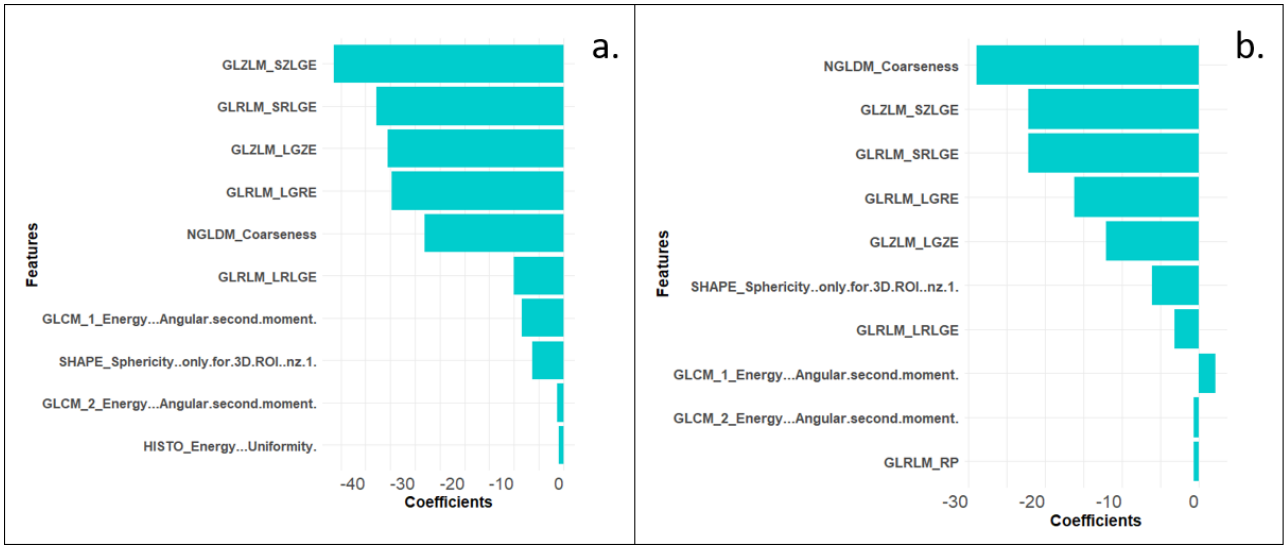


Figure S3. Elastic Net Cox model average coefficients (among 500 repetitions of the model based on a bootstrap resampling) for prediction of a: PFS and b: OS according to RFs extracted from "VOL_{max} lesion" segmented with Method-1. Only coefficients larger than 1.00 are represented.

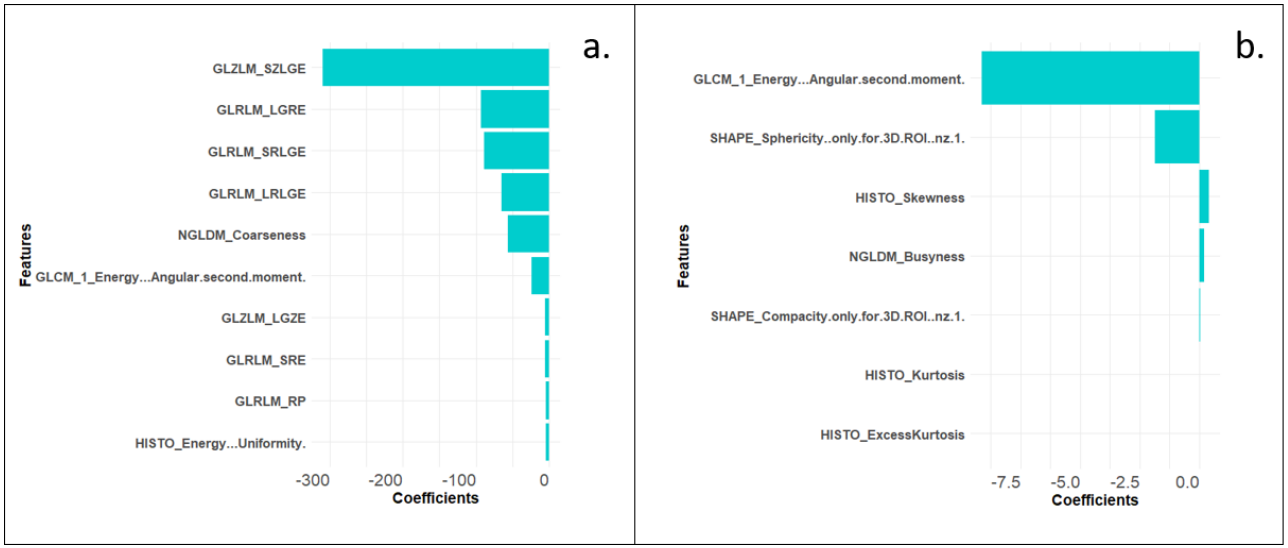


Figure S4. Univariate association (Log-Rank rank test) between dichotomized RS and a: PFS; b: OS. RS were obtained from radiomic features extracted from "SUV_{max} lesion" segmented with Method-1

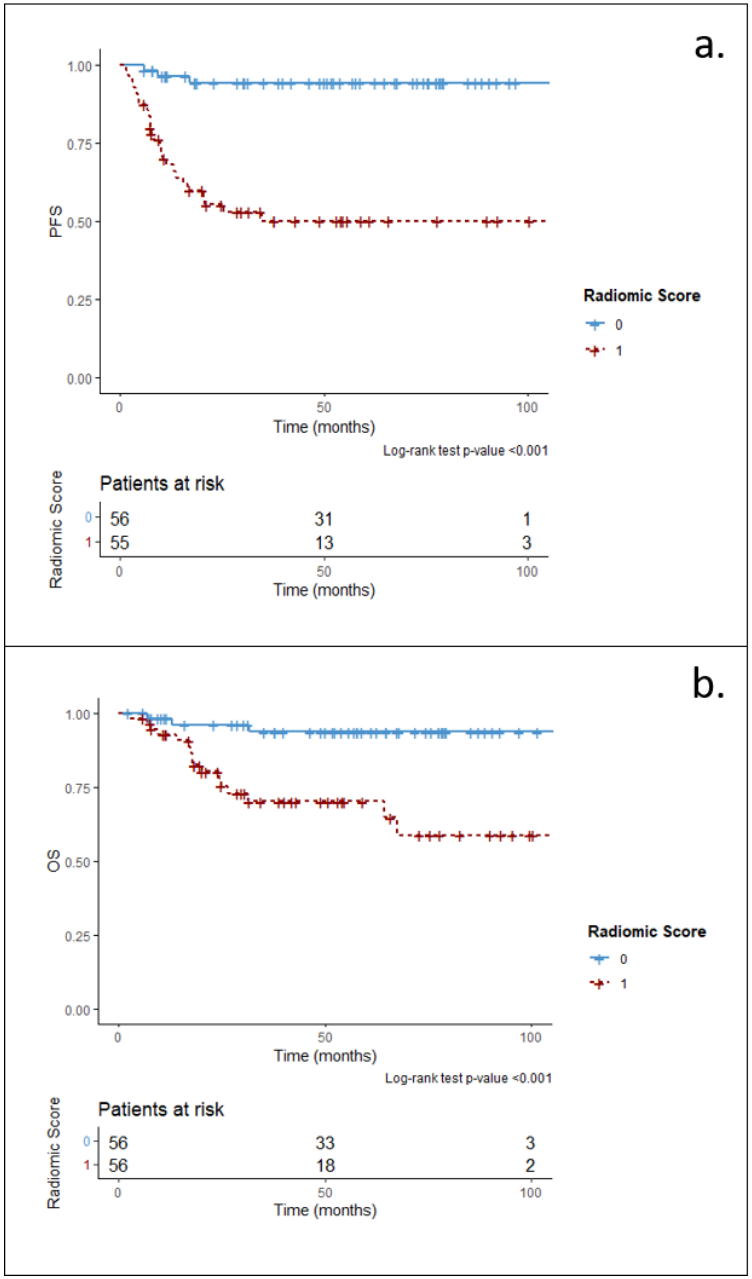


Figure S5. Univariate association (Log-Rank rank test) between dichotomized RS and a: PFS; b: OS. RS were obtained from radiomic features extracted from "VOL_{max} lesion" segmented with Method-2

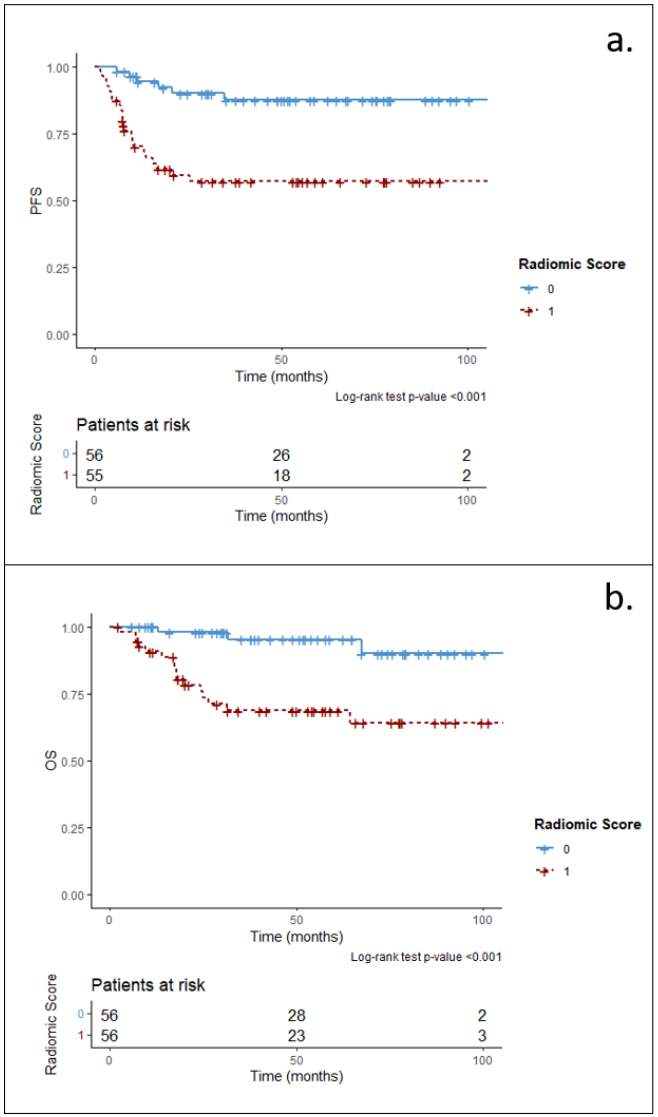


Figure S6. Univariate association (Log-Rank rank test) between dichotomized RS and a: PFS; b: OS. RS were obtained from radiomic features extracted from "VOL_{max} lesion" segmented with Method-1

