Supplemental data

Supplemental Table 1. Baseline PET parameters of included studies

	Total (n=1195)	GSTT15 (n=97)	HOVON-130 (n=65)	HOVON-84 (n=308)	IAEA (n=104)	NCRI (n=133)	PETAL (n=368)	SAKK (n=120)
MTV	324.4 (81.7-828.8)	384.6 (101.7-895.4)	610.4 (187.0-1295.6)	397.8 (133.9-933.6)	191.1 (74.2-608.8)	356.4 (92.3-838.9)	261.8 (45.5-725.7)	246.3 (73.5-743.2)
SUV$_{peak}$	17.6 (12.1-24.4)	19.9 (13.5-26.9)	17.7 (11.9-24.2)	17.6 (13.5-23.6)	14.6 (9.5-21.2)	20.8 (13.6-27.1)	18.1 (11.5-23.9)	15.7 (11.3-22.8)
Dmax$_{bulk}$	22.2 (4.8-41.2)	22.1 (10.9-43.4)	32.6 (18.6-47.0)	31.4 (14.3-46.8)	15.8 (10.0-24.8)	27.7 (88.9-42.9)	16.4 (0-39.3)	19.9 (8.2-38.8)

Data are presented as median (interquartile range). Abbreviations: MTV: metabolic tumor volume, Dmaxbulk: maximum distance between the largest lesion and any other lesion, SUVpeak: the peak of the standardized uptake value.

Supplemental Table 2. Model performance expressed as AUC for patients treated with R-CHOP only and AUCs after updating the clinicalPET model.

	All patients				R-CHOP only				Re-calibrated/updated radiomics model with all patients	
	2-year PFS		2-year TTP		2-year PFS		2-year TTP		2-year PFS	2-year TTP
	IPI	clinicalPET	IPI	clinicalPET	IPI	clinicalPET	IPI	clinicalPET	Radiomics	clinicalPET
All patients	0.62	0.71	0.62	0.71	0.62	0.71	0.62	0.71	0.71	0.72
GSTT15	0.63	0.72	0.62	0.71	0.64	0.75	0.62	0.74	0.73	0.74
HOVON-130	0.53	0.59	0.53	0.60	-	-	-	-	0.58	0.59
HOVON-84	0.67	0.75	0.69	0.79	0.67	0.75	0.69	0.79	0.75	0.77
IAEA	0.56	0.65	0.56	0.66	0.63	0.68	0.63	0.69	0.65	0.64
NCRI	0.56	0.71	0.59	0.70	0.56	0.71	0.59	0.70	0.71	0.73
PETAL	0.65	0.75	0.62	0.75	0.64	0.75	0.61	0.74	0.76	0.79
SAKK	0.51	0.71	0.51	0.70	0.51	0.71	0.51	0.70	0.70	0.67

Abbreviations: R-CHOP: rituximab, cyclophosphamide, doxorubicin, vincristine and prednisone, TTP: time to progression, PFS: progression free survival, IPI: international prognostic index

Supplemental Table 3. Diagnostic measures of clinicalPET model after updating coefficients.

		Sensitivity	Specificity	PPV	NPV
Original	2-year PFS	39.18 (33.53-45.04)	39.18 (33.53-45.04)	39.18 (33.53-45.04)	39.18 (33.53-45.04)
	2-year TTP	86.95 (84.57-89.08)	86.95 (84.57-89.08)	86.95 (84.57-89.08)	86.95 (84.57-89.08)
Updated	2-year TTP	39.42 (65.44-81.84)	87.61 (85.28-89.69)	45.89 (40.18-51.72)	84.43 (83.01-85.76)
	2-year PFS	40.21 (34.53-46.09)	87.28 (84.93-89.38)	50.43 (44.93-55.93)	81.93 (80.44-83.33)

Abbreviations: PPV: positive predictive value, NPV: negative predictive value, TTP: time to progression , PFS: progression free survival

Supplemental Table 4. Model performances using cox regression modeling and 2-year PFS as outcome.

	C-index	AIC
MTV/ECOG	0.63	4005.1
IMPI	0.66	3983.3
ClinicalPET	0.69	3957.7