

**Supplemental Table 1.** Studies showing the relationship between tumour, bone marrow and nodal glucose metabolism and host systemic inflammatory responses in patients with cancer

Author	Date	Country	(n)	Type of Cancer	Tracer	Measurements	Readings	Correlation	Survival
Prevost et al(21)	2006	Canada	120	Lung	18-FDG	TSUVmean TSUVmax BMSUVmax BLR WCC, Hb, Platelets	TSUVmean: 6.2 (1.4-23) BMSUVmax:1.5 (0.6-3.2) BLR: 1 (0.6-2.4)	Spearman correlation TSUVmax BMSUVmax: (r=0.20 p<0.05) BLR: NS WCC (NS) Hb (NS) Platelets (NS)  BMSUVmax BLR: (r=0.76 p<0.05) TSUVmax: (r=0.20 p<0.05) WCC (r=0.38 p<0.05) Hb (r=-0.30 p<0.05) Platelets (r=0.24 p<0.05)  BLR BMSUVmax: 0.76 p<0.05) TSUVmax: NS WCC (r=0.49 p<0.05) Hb (NS) Platelets (r=0.30 p<0.05)	Kaplan-Meier OS: Median survival (95%CI) TSUVmax (weight adjusted)≥10: 227 (122-690) p=0.003 BMSUVmax≥1.7: 151 (83-690) p=0.00006 BLR<1.5: 724 (553-1,094) p=0.00004  Multivariate Cox Regression OS: BMSUVmax: RR: 1.6 95%CI 1.1-2.3 p=0.008
Cicone et al(22)	2008	Belgium	35	SCC of head and neck	18-FDG	TSUVmax TSUVmean BMSUVmax, BMSUVmean, Tumour size, Hb, WCC, Platelet, RBC	TSUVmax: 10.4 (3.2-29.9) TSUVmean: 7.8 (2.6-24.6) BMSUVmean: 1.4 (0.7-2.4)	Pearson's Correlation TSUVmax: No correlation with any blood parameters  TSUVmean: WCC (r=0.44; p=0.011)  BMSUVmean: No correlation with any blood parameters	CSS: Multivariate Cox Regression BMSUVmean: p=0.04 (No HR or CI given)  OS: Multivariate Cox Regression BMSUVmean: p=0.03 (No HR or CI given)
Inoue et al(20)	2009	Japan	32	Multiple	18-FDG	BMSUVmean, LiverSUVmean, BLR, WCC, RBC, Platelet, CRP	BMSUV mean: 1.4±0.3 Liver SUV mean: 1.8±0.3 BLR: 0.75±0.16	Pearson's Correlation BMSUVmean: WCC: (r=0.28 p=NS) RBC (r=0.42. p<0.05) Platelet (r=-0.06 p=NS) CRP (r=0.25 p=NS)  BLR: WBC (r=0.35 p<0.05) RBC (r=0.12 p=NS) Platelet (r=0.06 p=NS)	Not carried out for PET-CT markers

								CRP (r=0.50 p<0.005)	
Chang et al(23)	2013	Taiwan	151	Oral cavity squamous cell carcinoma	18-FDG	SUVmax, CRP	TSUVmax≥19.3	Spearman Correlation TSUVmax: CRP (r=Not given p<0.001)	Not carried out for PET-CT markers
Chen et al.(24)	2013	China	106	Pharyngo-laryngeal	18-FDG	TSUVmax, NSUVmax, CRP	TSUVmax≥8.6mg/L NSUVmax≥5.7ng/ml	Chi-squared test TSUVmax CRP (p=0.472)  NSUVmax CRP (p=0.014)	Not carried out for PET-CT markers
Jeong et al(25)	2016	South Korea	1034	Lung	18- FDG	TSUVmax WBC, Neutrophil, Lymphocyte, NLE	TSUV max>7.83	Linear Correlation: TSUVmax: WCC (r=0.208 p<0.001) Neutrophil (r=0.175 p<0.001) Lymphocyte (r=0.101 p=0.001) NLR (r=0.004 p=0.004)	Multivariate Cox Regression: OS: TSUVmax>7.83: HR: 2.222 95%CI 1.518-3.254 p<0.001
Zhong et al(26)	2017	China	121	Naso-pharyngeal carcinoma	18- FDG	TSUVmax, NSUVmax, Neutrophils, Monocytes, Leukocytes	TSUVmax: >12.35 NSUVmax >10.15	Spearman's Correlation TSUVmax: Leukocytes (r=0.203 p=0.025), neutrophils (r=0.238 p=0.009) monocytes (r=0.185 p=0.043)  NSUVmax: Leukocytes (r=0.068 p=0.46), neutrophils (r=0.023 p=0.802) monocytes (p=0.024 p=0.024)	Kaplan Mier PFS: TSUVmax>12.35: p=0.204 NSUVmax>10.15 p=0.004  DMFS: TSUVmax>12.35: Not conducted NSUVmax>10.15 p=0.003  Multivariate Cox Regression: PFS: NSUVmax>10.15: HR:2.572 95%CI 1.121-5.898 p=0.026  Multivariate Cox Regression: DMFS: NSUVmax>10.15: HR:3.065 95%CI 1.145-8.201 p=0.026
Lee et al(27)	2017	South Korea	110	Lung	18- FDG	TSUVmax, MBSUVmax BLR Albumin, CRP NLR, PLR, WCC, Hb	TSUVmax: 7.65 (0.80-19.00) MBSUVmax: 1.47 (0.94-2.63) BLR: 0.72 (0.46-1.40)	Spearman Correlation BMSUVmax: Albumin (r=-0.062 p=0.50) CRP (r=0.279 p=0.003) NLR (r=0.236 p=0.01) PLR (r=0.137 p=0.20)	Multivariate Cox Regression: PFS: TSUVmax>6.5: HR:3.169 95%CI 1.43-6.99 p=0.005 BLR>0.8: HR: 2.49 95%CI 1.25-4.94 p=0.01

								<p>WCC (r=-0.210 p=0.03) Hb (r=-0.038 p=0.70)</p> <p>BLR: Albumin (r=-0.227 p=0.02) CRP (r=0.437 p=0.001) NLR (r=0.305 p=0.001) PLR (r=0.318 p&lt;0.01) WCC (r=0.278 p=0.03) Hb (r=-0.069 p=0.50)</p>	<p>OS: TSUVmax&gt;6.5: HR:4.49 95%CI 1.05-19.92 p=0.04 BLR&gt;0.8: HR: 2.15 95%CI 0.69-7.87 p=0.20</p>
Lee et al(28)	2017	South Korea	106	Lung	18- FDG	<p>TSUVmax, MTV TLG BMSUVmax BLR WCC, Hb, NLR, PLR, Albumin, CRP</p>	<p>TSUVmax: 10.48 (1.40-32.19) MTV: 20.97 (1.10-650.75) TLG: 138.47 (2.80-3715.78) MBSUVmax: 1.57 (0.94-2.22) BLR: 0.79 (0.45-1.50)</p>	<p>Spearman Correlation BMSUVmax: WCC (r=0.294 p=0.002) Hb (r=-0.015 p=0.8) NLR (r=0.034 p=0.7) PLR (r=0.070 p=0.4) Albumin (r=-0.190 p=0.05) CRP (r=0.296 p=0.002)</p> <p>BLR: WCC (r=0.396 p&lt;0.001) Hb (r=-0.114 p=0.2) NLR (r=0.281 p=0.06) PLR (r=0.070 p=0.5) Albumin (r=-0.349 p&lt;0.001) CRP (r=0.428 p&lt;0.001)</p>	<p>Univariate Cox Regression: PFS: MTV: 1.00 (1.00-1.01) p=0.40 TLG: 1.00 (0.99-1.01) p=0.50</p> <p>Multivariate Cox Regression PFS: TSUVmax: HR:0.99 95%CI 0.92-1.04 p=0.5 BMSUVmax: HR:0.73 95%CI 0.18-3.05 p=0.73 BLR: HR: 14.44 95%CI 2.60- 80.28 p=0.002</p> <p>Univariate Cox Regression OS: BMSUVmax: HR: 2.01 95%CI 0.53-7.65 p=0.30</p> <p>Multivariate Cox Regression OS: TSUVmax: HR:1.00 95%CI 0.99-1.01 p=0.9 MTV: HR: 1.00 95%CI 0.99- 1.02 p=0.7 TLG: HR: 1.08 (0.94-1.22) p=0.07 BLR: HR: 1.24 95%CI 0.60- 24.61 p=0.90</p>
Lee et al (29)	2017	South Korea	309	Gastric	18- FDG	<p>BMSUVmax BLR CRP, Albumin, Hb, NLR, PLR</p>	<p>TSUVmax: 4.71 (2.62-37.80) BMSUVmax: 1.45 (0.55-2.66) BLR: 0.70 (0.28-1.35)</p>	<p>Spearman correlation BMSUVmax TSUVmax : (r=0.093 p=0.104) WCC: (r=0.039 p=0.600) Hb (r=-0.117 p=0.039) NLR (r=0.121 p=0.033) PLR (r=0.158 p=0.005) Albumin (r=-0.041 p=0.474) CRP (r=0.100 p=0.079)</p>	<p>Multivariate Cox Regression RFS: TSUVmax: HR: 1.33 95%CI 0.70-2.39 p=0.215 BMSUVmax: HR: 0.94 95%CI 0.38-2.33 p=0.945 BLR : HR : 6.42 95%CI 2.07- 19.84 p=0.001</p>

								BLR TSUVmax : (r=0.212 p=0.002) WCC : (r=0.003 p=0.563) Hb : (r=-0.172 p=0.002) NLR: (r=0.224 p=0.001) PLR : (r=0.250 p<0.001) Albumin (r=-0.168 p=0.003) CRP (r=0.094 p=0.100)	OS : TSUVmax : HR : 2.89 95%CI 0.96-8.72 p=0.059 BLR: HR: 10.39 95%CI 1.34- 80.33 p=0.025
McSorley et al(30)	2017	United Kingdom	103	Colorectal	18- FDG	TSUVmax TSUVpeak MTV TLG mGPS, NLR	TSUVmax: 11 (0-35) TSUVpeak: 8 (0-29) MTV: 4 (0-311) TLG: 28 (0-3124)	Categorical data: Chi squared test Continuous data: Mann-Whitney U test Pre-Op Scans (n=33): No association between TSUVmax, TSUVpeak, MTV, TLG, mGPS and NLR  Post-Op Scans (n=70) NLR≥5: TSUVmax (20 vs 7 p=0.002) SUVpeak (14 vs 4 p<0.001) MTV (29mL vs 2mL p=0.001) TLG (338g vs 9g p<0.001)  mGPS 1/2: TSUVmax (11 vs 6 p=0.048) SUVpeak (8 vs 4 p=0.046) MTV (13mL vs 2mL p=0.005) TLG (146g vs 10g p=0.004)	Univariate Cox Regression Post op cohort (n=70) CSS: TSUVmax: HR: 2.02 95%CI 0.82-4.98 p=0.128 MTV : HR : 1.68 95%CI 0.66- 4.22 p=0.275  Multivariate Cox Regression Post op cohortes (n=70) CSS: TSUVpeak: HR: 2.39 95%CI 0.95-5.99 p=0.064 TLG : HR :2.51 95%CI 1.00- 6.28 p=0.720
Lee et al(31)	2017	South Korea	226	Colorectal	18-FDG	TSUVmax Tumour size BMSUVmean, WCC, CRP, NLR, PLR	TSUVmax: 10.85 (2.54-48.80) BMSUVmean: 1.67 (0.63-3.12)	Spearman correlation: BMSUVmean: TSUVmax: (r=0.266 p<0.001) Tumour size: (r=0.159 p<0.017) WCC (r=0.160 p=0.016) CRP (r=0.252 p<0.001) NLR (r=0.223 p<0.001) PLR (r=-0.109 p=0.131)	Univariate Cox Regression RFS : TSUVmax>10.50 : HR : 0.59 95%CI 0.29-1.20 p=0.145 BMSUVmean>1.90 : HR : 2.94 95%CI 1.30-6.63 p=0.009

Footnote: C-reactive protein (CRP), WCC (White Cell Count), RBC (Red Blood Cell Count), mGPS (modified Glasgow Prognostic Score), NLR (Neutrophil to Platelet Ratio), PLR (Platelet to Lymphocyte Ratio), Hb (Haemoglobin), HR (Hazard Ratio), 95%CI (95%Confidence Interval), TSUVmax (Tumour SUVmax), BMSUVmax (Bone Marrow SUVmax), TSUVmean (Tumour SUVmean), BMSUVmean (Bone Marrow SUVmean), BLR (Bone marrow to Liver SUVmean Ratio), TLG (Total Lesion Glycolysis), MTV (Metabolic Tumour Volume)