

**Supplementary Tables S3. Characteristics of patients with oligometastatic and polymetastatic progression in metastasis(es) samples.**

No patient received chemotherapy concurrently with the radiation therapy. Adjuvant chemotherapy was initiated following RT only for patients showed progression. **Legend:** two-tailed Student t-test (t-test), two-tailed Fisher's Exact Test (FET), non-parametric Mann Whitney Test (MWT), logrank survival test (Logrank), NSCLC = non small cell lung cancer, SCLC = small cell lung cancer;  $\alpha$ =1 brain and 1 lung metastasis from same patient,  $\infty$  = 1 omental and 1 small bowel metastasis from same patient, \*=statistically significant.

<b>Patients (#)</b>	<b>All (N=14)</b>	<b>Oligometastatic Progression (N=9)</b>	<b>Polymetastatic Progression (N=5)</b>	<b>p-value</b>
<b>Median Age (years)</b>	59.6	58.9	60.3	0.66 (t-test)
Range:	(34.2-80.1)	(34.2-80.1)	(55.8-70.2)	
<b>Sex</b>				0.30 (FET)
Female (%)	8 (57%)	4 (44%)	4 (80%)	
Male (%)	6 (43%)	5 (56%)	1 (20%)	
<b>Primary tumor type</b>	14	9	5	
Colorectal	2	0	2	
Head and Neck	1	1	0	
Lung, NSCLC	3	2	1	
Lung, SCLC	1	0	1	
Ovarian	1	0	1	
Renal	4	4	0	
Sarcoma	2	2	0	
<b>Metastatic Tissue Origin</b>	16	10	6	
Adrenal metastasis	2	1	1	
Brain $\alpha$	2	1	1	
Chest wall metastasis	1	1	0	
Lung metastasis $\alpha$	3	3	0	
Lymph node metastasis	4	3	1	
Peritoneal/omental metastasis $\infty$	2	0	2	
Small bowel metastasis $\infty$	1	0	1	
Spleen Metastasis	1	1	0	
<b>Median # prior and current metastasis(es) at radiation (Range)</b>	2.5 (1-5)	3 (1-4)	1 (1-5)	0.70 (MWT)
<b>Median # of metastasis(es) at tissue sampling (Range)</b>	1 (1-9)	1 (1-3)	2 (1-9)	0.24 (MWT)
<b>Survival:</b> (alive throughout follow-up/ total per group)	7 / 14	7 / 9	0 / 5	<b>0.021*</b> (FET)
<b>Median follow-up:</b> (months) Range:	22.0 (6.9-42.5)	29.2 (6.9-42.5)	17.9 (11.5-29.5)	<b>0.014*</b> (Logrank)