

Supplemental Table 1. Clinical characteristics of patients in RIS group and SARC group as a whole, or for WES, or for mRNA-seq.

Variables	RIS group	SARC group	p-value	RIS-WES	SARC-WES	p-value	RIS-RNA	SARC-RNA	p-value
Total patient number	144	123		46	48		16	8	
Age at diagnosis									
Mean (years old)	49.0	38.9	< 0.001	48.9	42.5	0.011	51.3	50.9	0.928
Median (years old)	48	38	-	48	42	-	48	47.5	-
Range (years)	20-84	5-83	-	20-70	19-69	-	34-77	41-69	-
> vs. ≤40 years old	113 (78.47%)vs. 31 (21.53%)	55 (44.7%)vs. 68 (55.3%)	< 0.001	36 (78.3%) vs. 10 (21.7%)	26 (54.2%) vs. 22 (45.8%)	0.017	13 (81.3%)vs. 3 (18.8%)	8 (100%)vs. 0	0.526
Gender			0.0672			0.366			0.129
Male	104 (72.2%)	75 (61.0%)		35 (76.1%)	32 (66.7%)		14 (87.5%)	4 (50.0%)	
Female	40 (27.8%)	48 (39.0%)		11 (23.9%)	16 (33.3%)		2 (12.5%)	4 (50.0%)	
Latency between primary and secondary tumor (years)			-			-			-
Mean	9.87	/		9.3	/		9	/	
Median	9	/		9	/		9	/	
Range	2-37	/		3-25	/		4-16	/	
Histology of first/primary tumor			-			-			-
NPC	118 (81.9%)	/		38 (82.6%)	/		13 (81.3%)	/	
Others	26 (18.1%)	/		8 (17.4%)	/		3 (18.8%)	/	
Subtypes of sarcoma			< 0.001			< 0.001			0.391
Fibrosarcoma	65 (45.1%)	45 (36.6%)		26 (56.5%)	14 (29.2%)		10 (62.5%)	3 (37.5%)	
Osteosarcoma	31 (21.5%)	29 (23.6%)		12 (26.1%)	6 (12.5%)		6 (37.5%)	5 (62.5%)	
UPS/MFH	17 (11.8%)	14 (11.4%)		2 (4.3%)	6 (12.5%)		/	/	
Angiosarcoma	4 (2.8%)	2 (1.6%)		1 (2.2%)	0		/	/	
Synovia sarcoma	1 (0.7%)	7 (5.7%)		1 (2.2%)	6 (12.5%)		/	/	
Rhabdomyosarcoma	2 (1.4%)	7 (5.7%)		0	5 (10.4%)		/	/	

Sarcoma without subtypes	24 (16.7%)	9 (7.3%)	4 (8.7%)	2 (4.2%)	/	/	
Others (LMS, ASPS, MPNST)	0	10 (8.1%)	0	9 (18.8%)	/	/	
Tumor location			< 0.001		< 0.001		-
Head&neck	134 (93.1%)	71 (57.7%)	42 (91.3%)	22 (45.8%)	16 (100%)	8 (100%)	
Others	10 (6.9%)	52 (42.3%)	4 (8.7%)	26 (54.2%)	/	/	
FNCLCC Grade			< 0.001		0.122		0.002
G1	10 (6.9%)	16 (13.0%)	7 (15.2%)	2 (4.2%)	0	1 (12.5%)	
G2	60 (41.7%)	76 (61.8%)	18 (39.1%)	26 (54.2%)	2 (12.5%)	6 (75.0%)	
G3	63 (43.8%)	29 (23.6%)	21(45.7%)	20 (41.7%)	14 (87.5%)	1 (12.5%)	
NA	11 (7.6%)	2 (1.6%)	/	/	/	/	

Abbreviations: NPC, nasopharyngeal carcinoma; UPS, Undifferentiated pleomorphic sarcoma; MFH, malignant fibrous histiocytoma; LMS, leiomyosarcoma; ASPS, alveolar soft part sarcoma; MPNST, malignant peripheral nerve sheath tumor.