

Supplementary

Table S1 Summary of first-line treatment (n=286)

First-line regimens	Therapeutic regimen	N
Chemotherapy (n=263)	Etoposide + cisplatin	124
	Etoposide + carboplatin	88
	Etoposide + lobaplatin	25
	Irinotecan + cisplatin	10
	Etoposide	8
	Etoposide + nedaplatin	4
	Irinotecan	1
	Irinotecan + lobaplatin + temozolomide	1
	Paclitaxel + cisplatin	1
	Gemcitabine + cisplatin	1
	Chemotherapy + immunotherapy (n=14)	Etoposide + carboplatin + atezolizumab
Sintilimab + etoposide + cisplatin		4
Etoposide + carboplatin + pembrolizumab		2
Etoposide + carboplatin + durvalumab		2
Etoposide + carboplatin + carrierizumab		1
Etoposide + carboplatin + adebrelimab		1
Chemotherapy + angiogenesis inhibitors (n=9)	Etoposide + cisplatin + anlotinib	1
	Etoposide + carboplatin + anlotinib	7
	Etoposide + cisplatin + apatinib	1

Table S2 Summary of second-line treatment (n=153)

Second-line regimens	Therapeutic regimen	N
Chemotherapy (n=131)	Irinotecan + cisplatin	44
	Etoposide + carboplatin	10
	Etoposide + cisplatin	9
	Irinotecan + cisplatin + temozolomide	8
	Irinotecan	6
	Irinotecan + carboplatin	6
	Etoposide + lobaplatin	5
	Irinotecan + lobaplatin	5
	Docetaxel	4
	Etoposide + cisplatin + ifosfamide	4
	Paclitaxel + cisplatin	4
	Temozolomide	3
	Etoposide + carboplatin + ifosfamide	3
	Paclitaxel	2
	Etoposide	2
	Irinotecan + nedaplatin	2
	Paclitaxel + carboplatin	2
	Etoposide + cisplatin + temozolomid	2
	Topotecan + lobaplatin + temozolomide	1
	Etoposide + carboplatin + temozolomide	1
	Etoposide + methotrexate + vincristine + cyclophosphamide	1
	Etoposide + lobaplatin + temozolomide	1
	Etoposide + carboplatin + irinotecan	1
	Etoposide + cisplatin + nimustine	1
	Topotecan + cisplatin	1
	Irinotecan + temozolomide	1
	Gemcitabine + lobaplatin	1
Carmustine	1	
Chemotherapy + immunotherapy (n=5)	Irinotecan + cisplatin + sintilimab	3
	Carrierizumab + paclitaxel	1
	Sintilimab + paclitaxel	1
Chemotherapy + angiogenesis inhibitors (n=8)	Docetaxel + anlotinib	1
	Irinotecan + cisplatin + anlotinib	1
	Etoposide + carboplatin + anlotinib	1
	Paclitaxel + apatinib	1
	Paclitaxel + anlotinib	3
	Paclitaxel + cisplatin + anlotinib	1
Immunotherapy + angiogenesis inhibitors (n=2)	Anlotinib + sintilimab	1
	Anlotinib + carrierizumab	1
Chemotherapy + immunotherapy + angiogenesis inhibitors (n=2)	Paclitaxel + anlotinib + sintilimab	2
Angiogenesis inhibitors (n=4)	Anlotinib	4
Immunotherapy (n=1)	Nivolumab	1

Table S3 Summary of third-line treatment (n=81)

Third-line regimens	Therapeutic regimen	N
Chemotherapy (n=58)	Irinotecan + cisplatin	12
	Etoposide + cisplatin + ifosfamide	5
	Ifosfamide + paclitaxel	4
	Paclitaxel + cisplatin	4
	Irinotecan	3
	Etoposide + cisplatin	3
	Etoposide + carboplatin + irinotecan	3
	Paclitaxel + carboplatin	2
	Temozolomide + irinotecan	2
	Irinotecan + lobaplatin	2
	Irinotecan + cisplatin + temozolomide	2
	Etoposide + cisplatin	2
	Paclitaxel	1
	Docetaxel	1
	Gemcitabine	1
	Etoposide	1
	Docetaxel + ifosfamide	1
	Temozolomide + paclitaxel	1
	Etoposide + nimustine	1
	Etoposide + ifosfamide + temozolomide	1
	Docetaxel + cisplatin	1
	Etoposide + cisplatin + temozolomide	1
	Irinotecan + fotemustine	1
	Etoposide + cisplatin + carmustine	1
	Etoposide + lobaplatin + temozolomide	1
	Irinotecan + carboplatin	1
	Chemotherapy + immunotherapy (n=7)	Carrierizumab + etoposide + carboplatin
Carrierizumab + paclitaxel		2
Carrierizumab + gemcitabine		1
Sintilimab + paclitaxel		1
Serplulimab + docetaxel		1
Chemotherapy + angiogenesis inhibitors (n=11)	Sintilimab + navelbine	1
	Paclitaxel + anlotinib	3
	Irinotecan + anlotinib	3
	Capecitabine + anlotinib	1
	Navelbine + anlotinib	1
	Topotecan + anlotinib	1
Angiogenesis inhibitors (n=5)	Temozolomide + anlotinib	2
	Anlotinib	4
	Apatinib	1

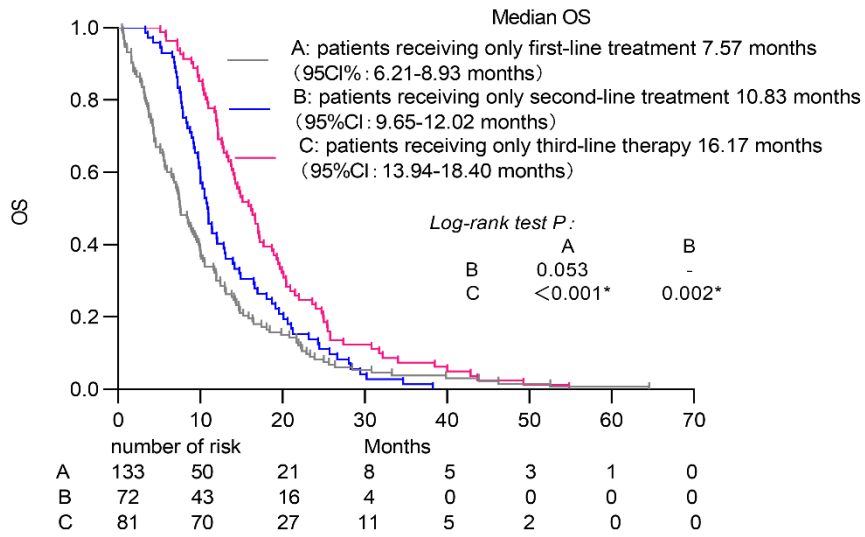


Figure S1 Survival curves of patients with only first-, second-, and third-line treatments.

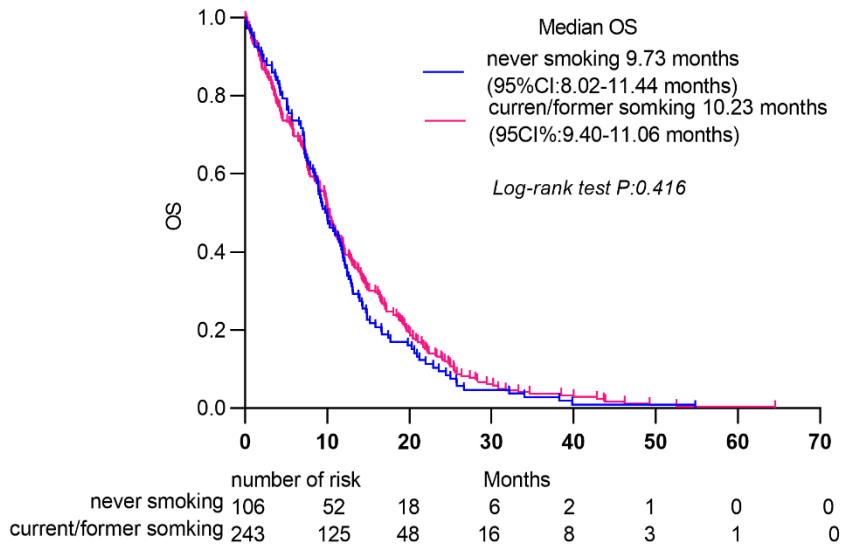


Figure S2 Survival curves of patients with smoking and never smoking.