



**Figure S1** PFS (A) and OS (B) based on prior administration of ICIs. n=15. One patient discontinued the protocol treatment on day 29 because of treatment refusal and was excluded from the analysis. The log-rank test was used to determine the significance of Kaplan-Meier curves. CI, confidence interval; OS, overall survival; PFS, progression-free survival; ICIs, immune checkpoint inhibitors.

**Table S1** Post-treatment (radiation therapy)

Types of radiation therapy	Number of patients
Whole brain radiation therapy	3
Stereotactic body radiation therapy (spinal cord)	1
None	10
Unknown	1

**Table S2** Post-treatment (chemotherapy)

Types of chemotherapy	Number of patients
None	9
S-1	2
Ramucirumab	1
docetaxel	1
Pemetrexed	1
Nivolumab	1
Pembrolizumab	1
Atezolizumab	1

**Table S3** ORR and PFS regarding previous studies

Study	Regimen	Patients	Phase	ORR (%)	PFS (months)
NEJ013A (6)	Carboplatin, pemetrexed, bevacizumab	Non-SQ NSCLC with MPE	II	46.4	8.2
REVEL (8)	Ramucirumab, docetaxel	NSCLC	III	23	4.5
PRONOUNCE (12)	Carboplatin, pemetrexed, bevacizumab	Non-SQ NSCLC	III	57	5.49
PLEURAM (current study)	Ramucirumab, docetaxel	NSCLC with MPE	II	7.1	6.13

ORR, overall response rate; PFS, progression-free survival; NSCLC, non-small cell lung cancer; SQ, squamous; MPE, malignant pleural effusion.