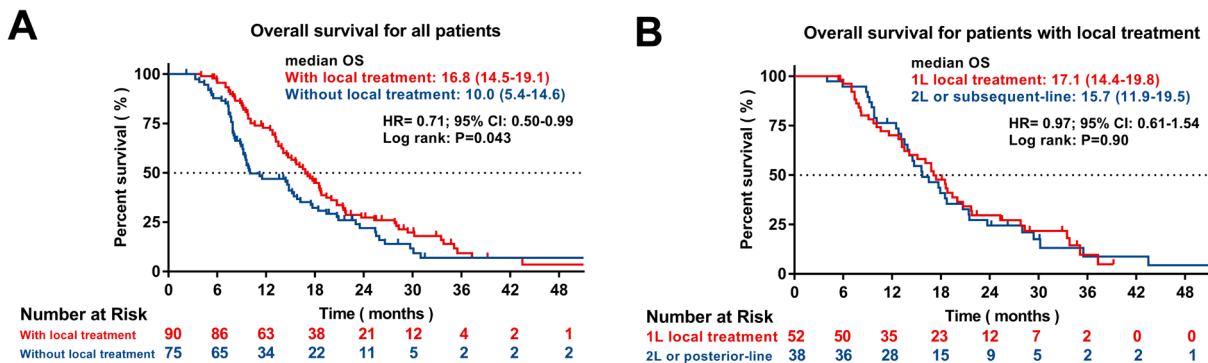
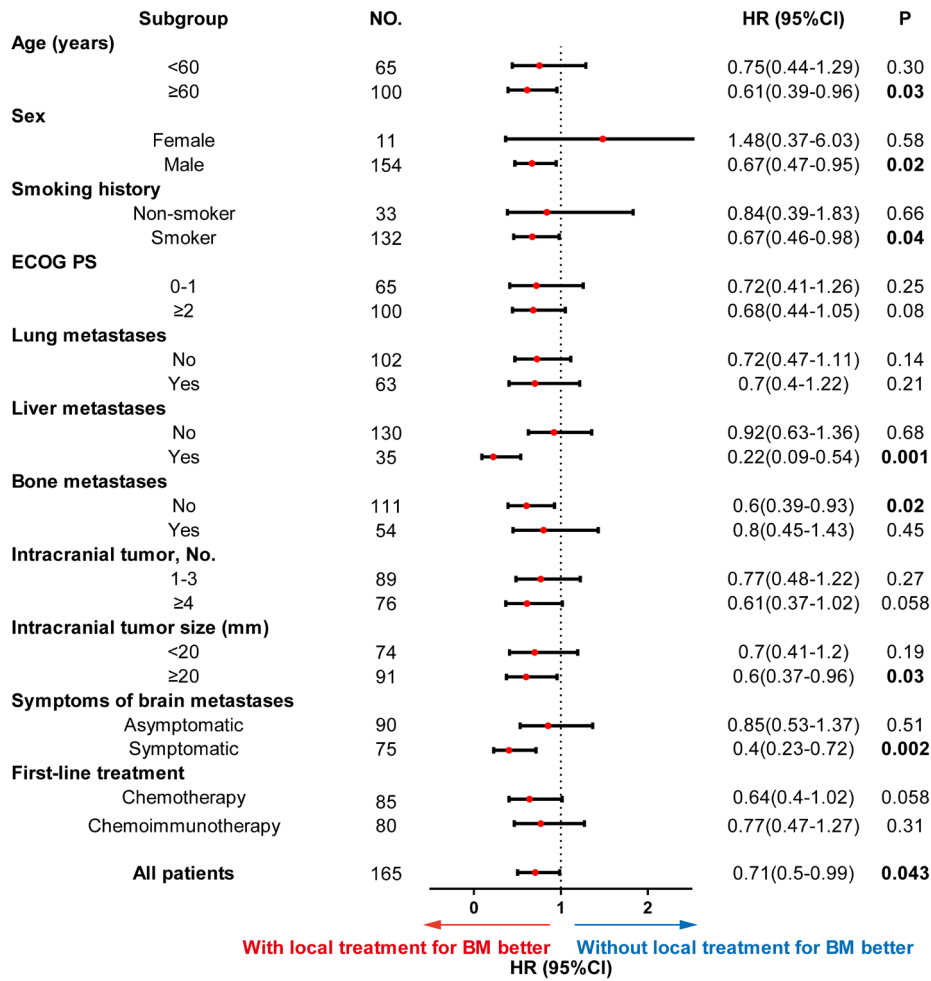


**Figure S1** Subgroup analysis of overall survival comparing chemotherapy and chemoimmunotherapy. HRs and corresponding 95% CIs were evaluated using Cox proportional hazards regression model. HR, hazard ratio; CI, confidence interval; ECOG PS, Eastern cooperative oncology group performance status.



**Figure S2** Kaplan-Meier estimates for overall survival according to whether the patients received local treatment for BM. (A) The OS of patients receiving local treatment for BM or not. (B) The OS of patients receiving first-line versus second-line or subsequent-line local treatment for BM. OS, overall survival; HR, hazard ratio; CI, confidence interval; 1L, first-line; 2L, second-line; BM, brain metastases.

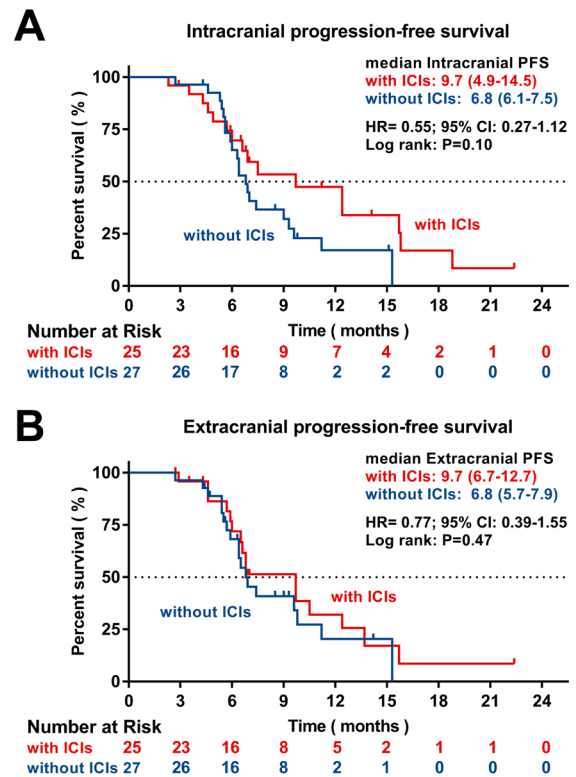
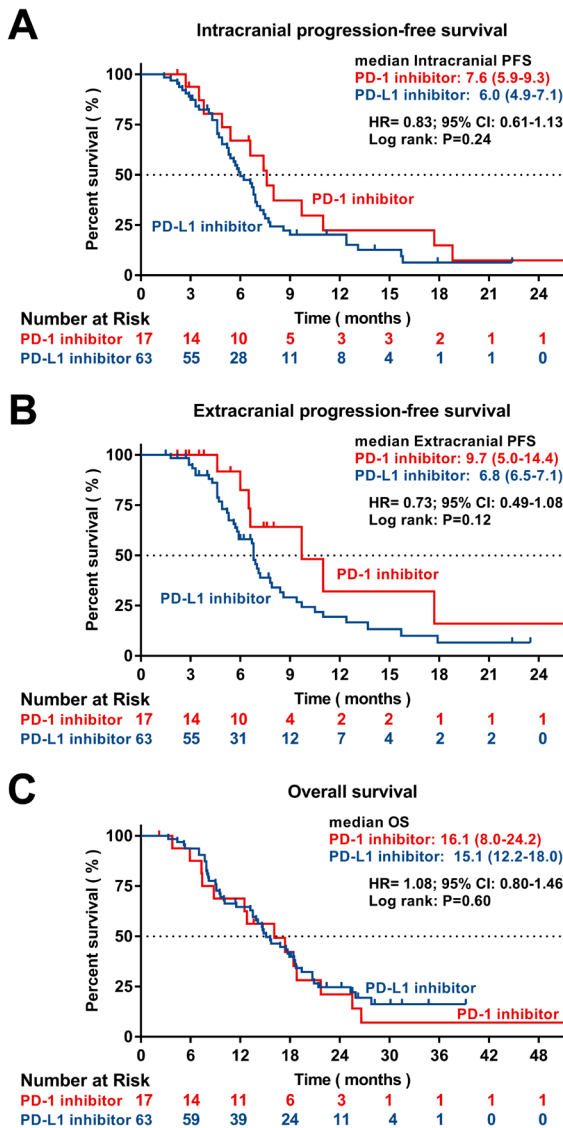


**Figure S3** Subgroup analysis of overall survival comparing patients with or without local treatment for BM. HRs and corresponding 95% CIs were evaluated using Cox proportional hazards regression model. HR, hazard ratio; CI, confidence interval; ECOG PS, Eastern cooperative oncology group performance status; BM, brain metastases.

**Table S1** Pattern of initial progression

First-line treatment	Lesions of the initial progression		
	Both intracranial and extracranial lesions	Intracranial lesions only	Extracranial lesions only
<b>With ICIs</b>			
No	46 (56.1%)	26 (31.7%)	10 (12.2%)
Yes	36 (46.2%)	29 (37.2%)	13 (16.7%)
<b>With local therapy targeting brain lesions</b>			
No	59 (53.2%)	41 (36.9%)	11 (9.9%)
Yes	23 (46.9%)	14 (28.6%)	12 (24.5%)
<b>All patients</b>	<b>82 (51.3%)</b>	<b>55 (34.4%)</b>	<b>23 (14.4%)</b>

ICIs, immune checkpoint inhibitors.



**Figure S5** Kaplan-Meier estimates for patients who received local treatment with or without ICIs. (A) The intracranial PFS of patients who received local treatment with or without ICIs. (B) The extracranial PFS of patients who received local treatment with or without ICIs. PFS, progression-free survival; ICIs, immune checkpoint inhibitors; HR, hazard ratio; CI, confidence interval.

**Figure S4** Kaplan-Meier estimates according to different ICIs. (A) The intracranial PFS of patients with PD-1 or PD-L1 inhibitors. (B) The extracranial PFS of patients with PD-1 or PD-L1 inhibitors. (C) The overall survival of patients with PD-1 or PD-L1 inhibitors. PFS, progression-free survival; PD-1, programmed death receptor 1; PD-L1, programmed cell death 1 ligand 1; HR, hazard ratio; CI, confidence interval; ICIs, immune checkpoint inhibitors.