

Supplemental Table 1: Indications of baseline corticosteroids (within 30 days prior to start date)			
	Type of corticosteroids	Dosing of corticosteroids	Indications of corticosteroids
Patients who developed pericardial disease	Dexamethasone	12 mg	With treatment of olarutumab
	Dexamethasone	4 mg twice daily	A focal seizure following stereotactic radiosurgery treatment requiring dexamethasone taper
	Methyl-prednisone followed by prednisone	60mg daily methylprednisone followed by 10mg prednisone	For possible immune checkpoint inhibitor induced pneumonitis
	Prednisone	50 mg daily	Premedication for CT scan
	Prednisone	40 mg daily	Burst treatment for presumed chronic obstructive pulmonary disease exacerbation
	Prednisone	5 mg daily	Started for orthostasis
	Prednisone	60 mg daily	Burst treatment for presumed chronic obstructive pulmonary disease exacerbation
Patients who did not develop pericardial disease	Dexamethasone	4 mg twice daily	With whole brain radiotherapy
	Prednisone	20 mg daily	Concern for grade I pneumonitis related to immune checkpoint inhibitors
	Prednisone	10 mg daily	Treatment for presumed chronic obstructive pulmonary disease exacerbation
	Dexamethasone	4mg twice daily	Premedication for carboplatin/pemetrexed/pembrolizumab
	Prednisone	50 mg daily	Premedication for CT scan

Supplemental Table 2: Univariate Cox regression model to evaluate for association of baseline characteristics with pericardial disease

	Hazard Ratio for pericardial disease (95% confidence interval)	Chi-square	P value
Age >65	0.74 (0.45, 1.22)	1.38	0.24
Overweight	0.63 (0.34, 1.17)	2.16	0.14
Hypertension	0.73 (0.44, 1.20)	1.59	0.21
Diabetes mellitus	0.61 (0.28, 1.33)	1.55	0.21
Smoking	0.96 (0.46, 2.01)	0.01	0.90
Chronic kidney disease	1.51 (0.77, 2.98)	1.44	0.23
Prior pericardial disease	5.16 (1.26, 21.13)	5.20	0.022
Myocardial infarction	0.30 (0.04, 2.14)	1.46	0.23
Prior cardiovascular events	0.26 (0.06, 1.05)	3.58	0.06
Angiotensin converting enzyme inhibitor or angiotensin II receptor blocker	0.81 (0.44, 1.49)	0.48	0.49
Beta-blockers	1.29 (0.76, 2.21)	0.89	0.34
Calcium channel blockers	0.55 (0.22, 1.36)	1.68	0.19
Diuretics	1.52 (0.90, 2.58)	2.41	0.12
Aspirin	0.90 (0.49, 1.66)	0.12	0.74
Baseline corticosteroid use	2.56 (1.27, 5.15)	6.92	0.0085
Lung	4.22 (2.55, 6.98)	31.38	<0.001
Head and neck	0.71 (0.30, 1.64)	0.66	0.42
Breast	0.64 (0.16, 2.60)	0.40	0.53
Gynecologic	1.88 (0.75, 4.68)	1.82	0.18
Hepatobiliary	0.51 (0.07, 3.66)	0.45	0.50

Radiation therapy	0.84 (0.38, 1.85)	0.18	0.67
5-fluorouracil	0.22 (0.03 1.60)	2.24	0.13
Anthracyclines	0.50 (0.12, 2.05)	0.91	0.34
Tyrosine kinase inhibitors	1.01 (0.14, 7.32)	0.0002	0.99
Platinum-based therapy	2.22 (1.34, 3.67)	9.59	0.002

Supplemental Table 3: Association with pericardial disease			
	Hazard Ratio for pericardial disease	Chi-square	P value
Treatment with ICI	12.86 (5.40, 30.61)	33.3	<0.001
Multivariate model			
Treatment with ICI	7.87 (2.99, 20.71)	17.5	<0.001
Lung cancer	6.37 (3.18, 12.77)	27.2	<0.001
Prior pericardial disease	2.95 (0.70, 12.39)	2.17	0.14
Prior radiation	0.72 (0.28, 1.86)	0.47	0.49
History of cardiovascular events	0.18 (0.03, 1.31)	2.8	0.09
Platinum-based therapy	1.10 (0.57, 2.13)	0.09	0.77
Baseline corticosteroid use	2.01 (0.97, 4.17)	3.49	0.07
The risk of pericardial disease in 2842 patients treated with ICI were compared to reference group including 2699 age and cancer type matched patients with metastatic disease who did receive ICI treatment (Design 1). Follow-up time was limited to two years in this analysis.			

Supplemental Table 4: causes of death in patients who developed pericardial disease		
Cause of Death	Patients who received ICI and developed pericardial disease (n=26)	Patients who did not receive ICI and developed pericardial disease (n=14)
Disease progression	17 (65.4%)	6 (42.9%)
Immune related adverse events	2 (7.7%)	0
Pericardial disease	3 (11.5%)	0
Other causes	1 (3.8%)	3 (21.4%)
Missing information	3 (11.5%)	5 (35.7%)