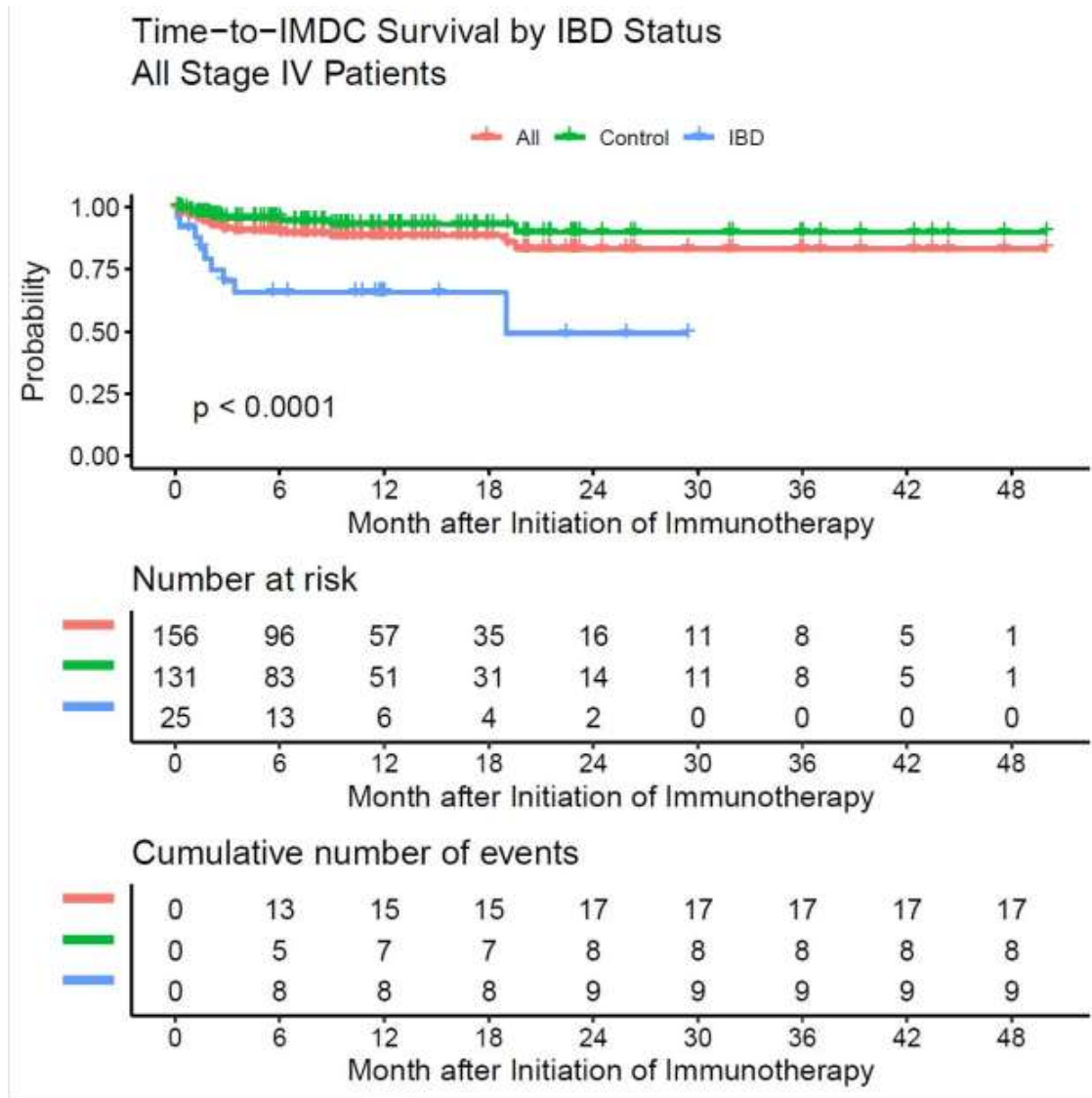
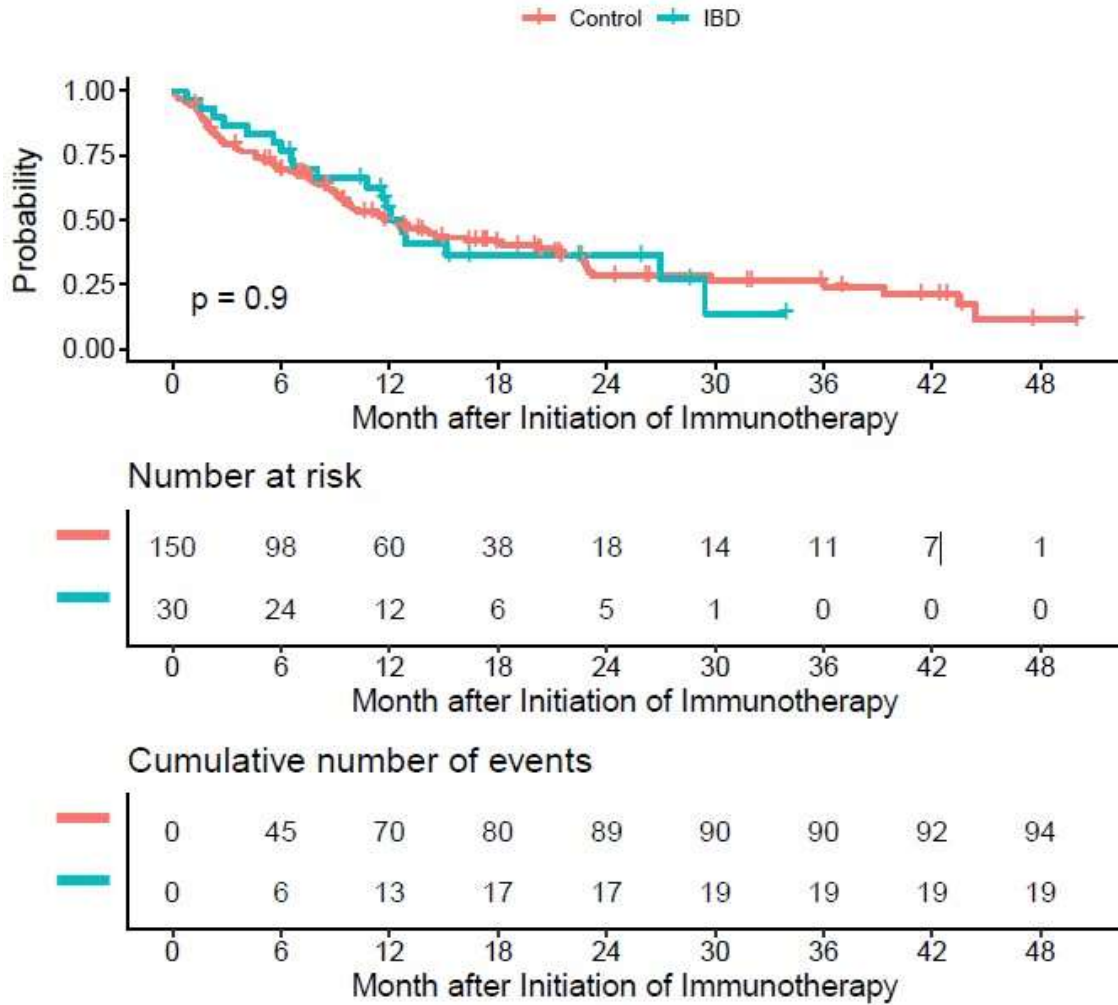


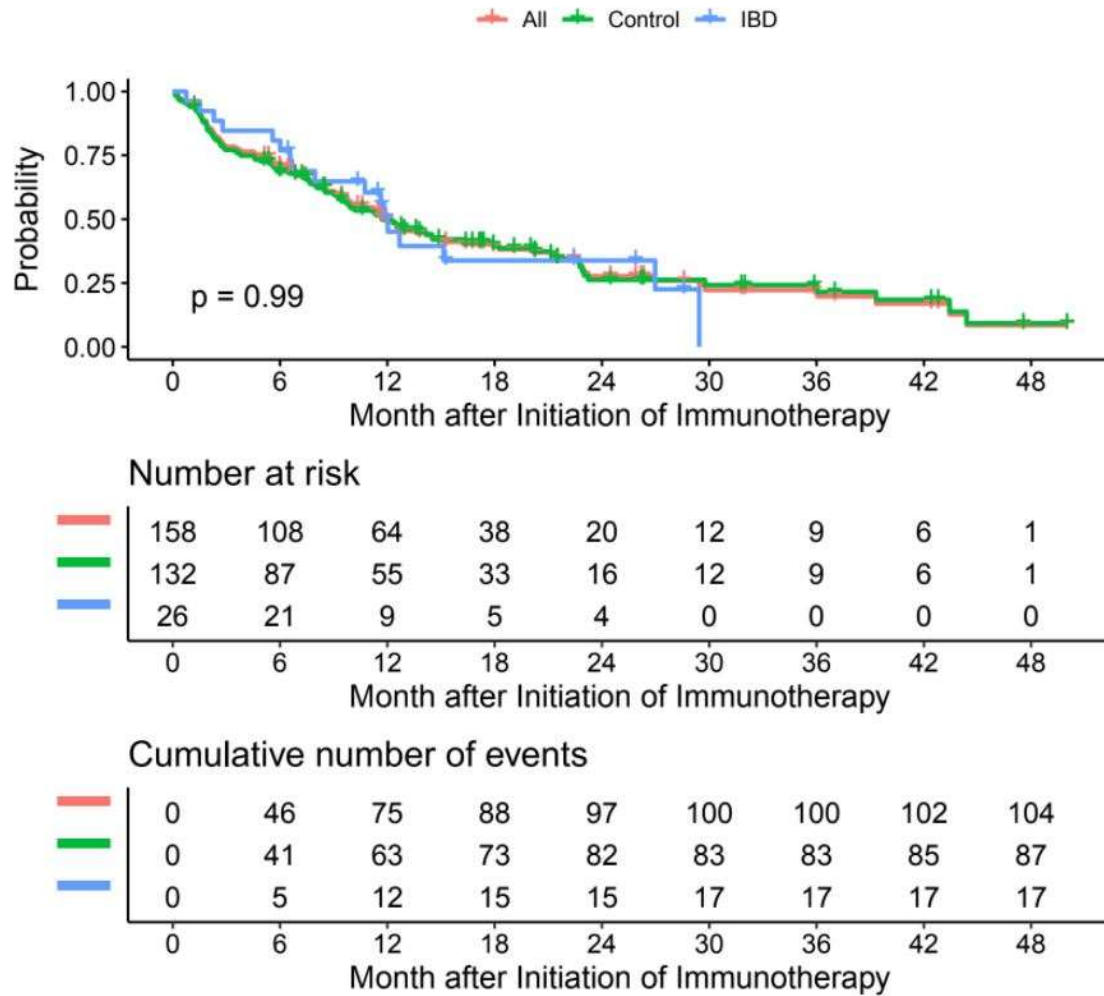
**Supplemental Figure 1**



**Supplemental Figure 2**

**Overall Survival by IBD Status  
Matched Cohorts**



**Supplemental Figure 3****Overall Survival by IBD Status  
All Stage IV Patients**

**Supplemental Table 1.** Summary of patient immunotherapy related adverse events by patient group. IBD and control cohorts were propensity score matched by cancer type, cancer medication, and age. P-values by Fisher's exact test.

	Group				All		P-value
	Ctrl		IBD		N	%	
	N	%	N	%			
<b>IRAEs</b>							
No	73	48.67	11	36.67	84	46.67	0.32
Yes	77	51.33	19	63.33	96	53.33	
<b>Hepatic injury</b>							
No	136	90.67	28	93.33	164	91.11	>0.99
Yes	14	9.33	2	6.67	16	8.89	
<b>Endocrinologic</b>							
No	121	80.67	26	86.67	147	81.67	0.61
Yes	29	19.33	4	13.33	33	18.33	
<b>Pulmonary</b>							
No	134	89.33	27	90	161	89.44	>0.99
Yes	16	10.67	3	10	19	10.56	
<b>Integumentary</b>							
No	127	84.67	27	90	154	85.56	0.58
Yes	23	15.33	3	10	26	14.44	
<b>Hematologic</b>							
No	148	98.67	29	96.67	177	98.33	0.42
Yes	2	1.33	1	3.33	3	1.67	
<b>Pancreatic injury</b>							
No	148	98.67	29	96.67	177	98.33	0.42
Yes	2	1.33	1	3.33	3	1.67	
<b>Neurologic</b>							
No	146	97.33	30	100	176	97.78	>0.99
Yes	4	2.67	0	0	4	2.22	
<b>Ophthalmologic</b>							
No	147	98	30	100	177	98.33	>0.99
Yes	3	2	0	0	3	1.67	
<b>Arthritis/myositis</b>							
No	140	93.33	28	93.33	168	93.33	>0.99
Yes	10	6.67	2	6.67	12	6.67	
<b>Cardiac</b>							
No	149	99.33	30	100	179	99.44	>0.99
Yes	1	0.67	0	0	1	0.56	
<b>Rheumatologic</b>							
No	144	96	29	96.67	173	96.11	>0.99

Yes	6	4	1	3.33	7	3.89	
<b>Venous Thromboembolism</b>							
No	147	98	30	100	177	98.33	>0.99
Yes	3	2	0	0	3	1.67	
<b>Renal</b>							
No	148	98.67	30	100	178	98.89	>0.99
Yes	2	1.33	0	0	2	1.11	
<b>ICI colitis</b>							
No	144	96	22	73.33	166	92.22	<b>0.0004</b>
Yes	6	4	8	26.67	14	7.78	
<b>ICI diarrhea</b>							
No	146	97.33	27	90	173	96.11	0.0918
Yes	4	2.67	3	10	7	3.89	
<b>IMDC</b>							
No	140	93.33	19	63.33	159	88.33	<b>0.001</b>
Yes	10	6.67	11	36.67	21	11.67	
<b>ICI Stop Reason</b>							
1 - Colitis	6	4	7	23.33	13	7.22	<b>0.04</b>
2 - Disease progression	51	34	8	26.67	59	32.78	
3 - Other irAE	23	15.33	6	20	29	16.11	
4 - death	32	21.33	4	13.33	36	20	
5 - Complete Remission	1	0.67	0	0	1	0.56	
6 - Still Receiving	23	15.33	5	16.67	28	15.56	
7 - Infection	5	3.33	0	0	5	2.78	
8 - Treatment Break	9	6	0	0	9	5	
<b>ICI Stop Reason</b>							
N/A (still receiving)	23	15.33	5	16.67	28	15.56	
Others	98	65.33	12	40	110	61.11	<b>0.006</b>
irAE	29	19.33	13	43.33	42	23.33	

**Supplemental Table 2. Summary of patients with a history of radiation therapy and rates of immune mediated colitis and diarrhea.**

Group	Cancer area	Stage	History of Chemotherapy	ICI therapy	Number of ICI doses	imDC	Area(s) of radiation
IBD	Bronchus; lung	4	Yes	Nivolumab	6	Yes	Left iliac crest
IBD	Bronchus; lung	4	Yes	Pembrolizumab	1	Yes	Brain, L2-3, sacrum
IBD	Bronchus; lung	4	Yes	Pembrolizumab	2	No	Brain, left hip
Ctrl	Bronchus; lung	4	Yes	Nivolumab	83	No	Left chest, left adrenal gland
Ctrl	Bronchus; lung	4	Yes	Pembrolizumab	6	No	Brain
Ctrl	Bladder	4	Yes	Atezolizumab	10	No	T9-L2 spine
Ctrl	Bronchus; lung	4	Yes	Atezolizumab	8	No	Brain
Ctrl	Bronchus; lung	4	Yes	Nivolumab	2	No	Sternum
Ctrl	Bronchus; lung	4	No	Atezolizumab	5	No	Brain
Ctrl	Bronchus; lung	4	Yes	Atezolizumab	6	No	Eyes
Ctrl	Bronchus; lung	4	Yes	Pembrolizumab	1	No	Right hip, right humerus, T11-L1 spine
Ctrl	Bronchus; lung	4	Yes	Nivolumab	1	No	Left femur
Ctrl	Bronchus; lung	4	Yes	Nivolumab	5	No	Left ribs
Ctrl	Melanomas of skin	4	Yes	Ipilimumab and Nivolumab	6	No	T10-T12 spine
Ctrl	Breast	4	Yes	Atezolizumab	1	No	Brain, chest wall
Ctrl	Rectum and anus	4	Yes	Pembrolizumab	6	No	C1-3 spine, T3-6 spine
Ctrl	Bronchus; lung	4	Yes	Nivolumab	3	No	Brain, distal tibia
Ctrl	Bronchus; lung	3	Yes	Durvalumab	26	No	Right Lung, mediastinum
Ctrl	Head and neck	4	Yes	Pembrolizumab	1	No	Posterior mandibular gingiva, T8-T12 spine, left lung, left anterior chest wall
Ctrl	Bronchus; lung	4	Yes	Atezolizumab	2	No	left hip, left femur, sacrum, brain
Ctrl	Bronchus; lung	4	Yes	Pembrolizumab	1	No	Right chest, mediastinum
Ctrl	Bronchus; lung	3	Yes	Durvalumab	13	No	Chest
Ctrl	Kidney and renal pelvis	4	Yes	Ipilimumab and Nivolumab	2	No	Head/neck, right femur

IBD= inflammatory bowel disease, Ctrl= control group, ICI= immune checkpoint inhibitor, imDC=immune mediated diarrhea and colitis