

Supplementary Table 1. Characteristics of patients with advanced melanoma

Characteristic	No. of patients (% , N=52)
Age, median (range)	67 (25-89)
Male sex	35 (67%)
Melanoma stage	
III	9 (17%)
IIIB	2 (4%)
IIIC	4 (8%)
Not specified	3 (6%)
IV	43 (83%)
M1a	6 (12%)
M1b	14 (27%)
M1c	19 (37%)
M1d	2 (4%)
Not specified	2 (4%)
Mutation	
BRAF	13 (25%)
BRAF V600E/K	11 (21%)
NRAS	16 (31%)
KIT	2 (4%)
Other	3 (6%)
None	18 (35%)
Prior systemic chemotherapy	2 (4%)
Immunotherapy class	
Anti-PD-1/PD-L1	30 (58%)
Anti-CTLA-4	8 (15%)
Combination PD-1/CTLA-4 blockade	14 (27%)

Supplementary Table 2. Multivariable logistic regression of variables associated with ICI discontinuation due to any immune-related toxicity

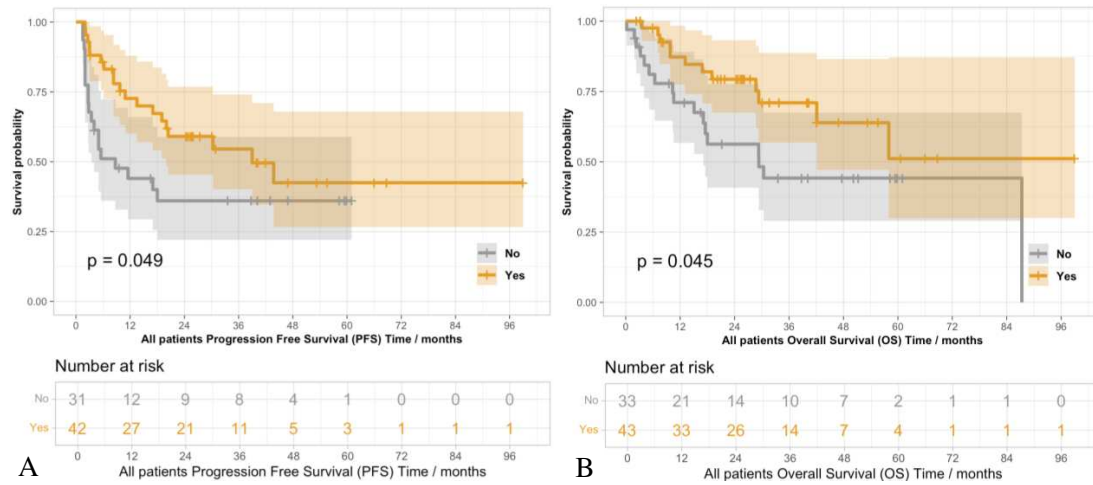
Factor	ICI Discontinuation		Psoriasis Flare	
	Odds Ratio (OR)	95% Confidence Interval	Odds Ratio (OR)	95% Confidence Interval
Age	0.71	(0.34 – 1.48)	0.67	(0.33 – 1.38)
Gender (Male vs. Female)	1.64	(0.53 – 5.03)	1.92	(0.66 – 5.55)
Immunotherapy Class (Anti-CTLA-4 vs. Anti-PD-1)	1.19	(0.23 – 6.16)	0.31	(0.06 – 1.64)
Immunotherapy Class (Combination PD-1/CTLA-4 blockade vs. Anti-PD-1)	5.32	(1.57 – 18.06)	0.43	(0.13 – 1.40)
Psoriasis Management Prior to ICI (Yes vs. No)	1.12	(0.40 – 3.12)	2.05	(0.77 – 5.44)

Supplemental Table 3. Additional ICI treatment and psoriasis flares or other IrAEs

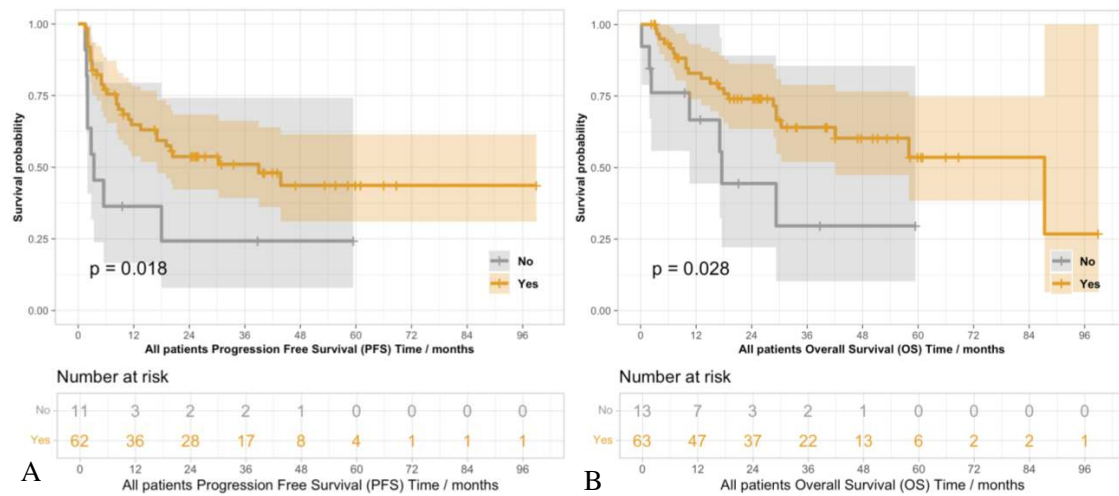
Patient ID	Initial agent	Psoriasis flare on initial agent	Rechallenge agent	Psoriasis flare or irAE after rechallenge
47	Ipilimumab	Yes	Pembrolizumab	
45	Ipilimumab	No	Ipilimumab	
14	Ipilimumab	No	Pembrolizumab	Grade 1 psoriasis
57	Ipilimumab	No	Pembrolizumab, ipilimumab, ipilimumab + nivolumab	
65	Ipilimumab + Nivolumab	No	Ipilimumab + nivolumab	
31	Nivolumab	Yes	Ipilimumab	
44	Nivolumab	Yes	Ipilimumab	
16	Nivolumab	Yes	Ipilimumab + nivolumab	
24	Nivolumab	Yes	Ipilimumab + nivolumab	
64	Nivolumab	Yes	Ipilimumab + nivolumab	
17	Nivolumab	Yes	Nivolumab	
1	Pembrolizumab	Yes	Nivolumab	
2	Pembrolizumab	Yes	Nivolumab	Grade 2 psoriasis
6	Pembrolizumab	Yes	Nivolumab	
35	Pembrolizumab	Yes	Nivolumab	
38	Pembrolizumab	Yes	Nivolumab	
61	Pembrolizumab	Yes	Pembrolizumab	
72	Pembrolizumab	No	Ipilimumab	Grade 3 colitis, grade 2 rash
37	Pembrolizumab	No	Ipilimumab + nivolumab	
76	Pembrolizumab	No	Ipilimumab, pembrolizumab	

Supplementary Table 4. ICI treatment response in patients with all cancer types

Treatment Response	Number with stage III disease (% , N=21)	Number with stage IV disease (% , N=55)
No evidence of disease (NED)	6 (29%)	1 (2%)
Complete response (CR)	5 (24%)	18 (33%)
Partial response (PR)	1 (5%)	12 (22%)
Stable disease (SD)	3 (14%)	6 (11%)
Progressive disease (PD)	6 (29%)	18 (33%)



Supplementary Figure 1. PFS (A) and OS (B), in months, of patients who experienced a psoriasis flare ('Yes') versus those who did not ('No') for patients with all cancer types with number of patients at risk and 95% confidence intervals. Analysis based off a landmark analysis from time point 1.5 months.



Supplementary Figure 2. PFS (A) and OS (B), in months, of patients who experienced any irAE, including psoriasis flare, ('Yes') versus those who did not ('No') for patients with all cancer types with number of patients at risk and 95% confidence intervals.