SUPPLEMENTARY TABLES

Supplementary Table 1. Type of immune-oncology (IO) antibodies (mAb) therapy

	No (%)
ICT mAb	All patients n=360
Monotherapy	**92 (26%)**
Anti PD-1	32 (9%)
Anti PDL-1	30 (8.5%)
Others	30 (8.5%)
Combination	268 (74%)
Anti PDL-1 + Radiotherapy	**35 (10%)**
Anti PD-1 + Targeted therapy non ICT	72 (20%)
Anti PD-1/Anti-PDL-1 + ICT	161 (45%)

Supplementary Table 2. Percentage of fast progression, pseudoprogression and dissociated response according to tumor histology.

	No (%)		
Histology	FastPD (n=45)	PsPD (n=10)	DisR (n=12)
Adnexial carcinoma	0	0	0
Urothelial	10 (21%)	2 (4%)	2 (4%)
Breast	3 (12%)	0	0
Ileum	0	0	0
Cavum	2 (20%)	0	0
Cervix	0	1 (5%)	2 (10%)
Cholangiocarcinoma	1 (33%)	0	0
Colorectal	7 (14%)	1 (2%)	1 (2%)
Colorectal MSS	*7 (18%)*	*0*	*1 (3%)*
Colorectal MSI-high	*0*	*1 (10%)*	*0*
Gastric, Oesophagus	4 (21%)	0	0
Hepatocarcinoma	2 (14%)	1 (7%)	0
Head and neck	3 (13%)	0	0
Renal	0	2 (7%)	1 (3%)
NSCLC	4 (8%)	1 (2%)	2 (4%)
Merkel carcinoma	0	0	0
Ovarian	2 (22%)	0	1 (11%)
Pancreas	2 (14%)	0	0
Penis	0	0	0
Mesothelioma	1 (13%)	0	1 (13%)
Prostate	3 (25%)	0	0
Sarcoma	0	0	0
Thymic	0	1 (33%)	1 (33%)

Thyroid	0	1 (20%)	0
Endometrium	1 (14%)	0	1 (14%)
Vagina	0	0	0 (0%)

Supplementary Table 3. Characteristics of patients who experienced an initial progression

	No (%)		P value
	Treatment beyond progression n = 81	No treatment beyond progression n = 122	
RMH score			0.04
0	25 (31%)	37 (30%)	
1	40 (50%)	42 (34%)	
2	14 (17%)	36 (30%)	
3	2 (2%)	7 (6%)	
GRIm score			0.02
0	35 (43%)	45 (37%)	
1	36 (44%)	43 (35%)	
2	9 (12%)	25 (21%)	
3	1 (1%)	8 (7%)	
LIPI score			0.008
0	39 (48%)	44 (36%)	
1	38 (47%)	54 (45%)	
2	4 (5%)	23 (19%)	
Reason for progression			0.17
Target lesions	36 (44%)	46 (38%)	
New lesions	20 (25%)	32 (26%)	
Non target lesions	7 (9%)	8 (7%)	
Target lesions plus another reason	17 (21%)	26 (21%)	
Non evaluable	1 (1%)	9 (8%)	
Best overall response beyond iUPD			
CR	2 (2%)		
PR	6 (8%)		
SD	8 (10%)		
PD	65 (80%)		

Supplementary Table 4. Frequency of atypical responses and progression according to iRECIST criteria at first evaluation (in the 12 weeks of drug exposure).

iUPD at first imaging	**No (%)**
Atypical responses	**17 (5%)**
PsPD	10 (3%)
DisR	7 (2%)
iRECIST-defined progression	**203 (56%)**
iCPD	65 (17%)
iUPD with no imaging further	122 (34%)