

Supplementary materials

Bone fracture as a novel immune-related adverse event with immune checkpoint inhibitors: case series and large-scale pharmacovigilance analysis

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Supplementary Table 1 – Adverse events involving skeleton at preferred terms (PTs) level recorded with the different classes of immune checkpoint inhibitors reported in at least five cases. 95% confidence interval (CI) was calculated only for PT showing reporting odds ratio (ROR) greater than 1. Significant RORs are highlighted in bold.

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Preferred terms	PD-1 inhibitors		PD-L1 inhibitors		CTLA-4 inhibitors	
	No. cases	ROR (95% CI)	No. cases	ROR (95% CI)	No. cases	ROR (95% CI)
Osteonecrosis of jaw	36	0.60	8	0.75		
Hip fracture	51	0.80	7	0.63	8	0.38
Rib fracture	44	1.07 (0.80-1.44)	5	0.70	7	0.51
Femur fracture	38	0.52	8	0.62		
Spinal fracture	28	0.75	5	0.76	12	0.97
Spinal compression fracture	47	2.55 (1.91-3.40)	9	2.77 (1.44-5.33)	9	1.46 (0.76-2.81)
Femoral neck fracture	26	2.38 (1.62-3.50)				
Compression fracture	13	1.34 (0.78-2.32)				
Lumbar vertebral fracture	20	2.33 (1.50-3.62)				
Thoracic vertebral fracture	12	2.16 (1.32-3.81)				
Cervical vertebral fracture	7	1.06 (0.51-2.23)				
Fractured sacrum	7	2.75 (1.31-5.79)				
Pelvic fracture	7	0.45				
Ankle fracture	7	0.22				
Upper limb fracture	11	0.26			6	0.43
Lower limb fracture	10	0.29				
Foot fracture	9	0.23				
Clavicle fracture	12	1.57 (0.89-2.77)				
Pubis fracture	8	3.00 (1.50-6.02)				
Joint injury	9	0.24				
Osteonecrosis	21	0.33	5	0.45	6	0.29
Joint dislocation	9	0.43				
Osteoporotic fracture	11	2.86 (1.58-5.18)				
Pathological fracture	46	3.17 (2.37-4.24)	14	5.48 (3.24-9.27)	15	3.10 (1.87-5.15)
Pelvic fracture	7	0.45				
Facial bones fracture	8	0.87				
Bursitis	19	0.87			5	0.69
Rotator cuff syndrome	9	0.32				
Humerus fracture	16	1.54 (0.94-2.51)				