Background Immune checkpoint inhibitors (ICIs) have revolutionized cancer care. However, their mechanism of action also results in the uncontrolled collateral of ICI-related adverse events (ICI-AEs). Polyarthritis is a rare ICI-AE. Here we describe two cases of ICI-induced polyarthritis, induced by nivolumab/ipilimumab and sasanlimab for melanoma and urothelial cancer, respectively.

Results A 64-year-old male received combination immunotherapy with nivolumab and ipilimumab for metastatic melanoma. Within one month of his second cycle of nivolumab alone, he developed polyarthritis of the small joints of the hands bilaterally, as well as the shoulders and knees; active synovitis; and erosive arthropathy on radiographic findings. He was successfully treated with prednisone at 20mg daily, gradually tapered over several months.

A 43-year-old male with high-grade non-invasive urothelial cell carcinoma received two cycles of adjuvant sasanlimab. Within two months of his second treatment, he developed a large-joint polyarthritis involving the bilateral knees, ankles, elbows, and the cervical spine. His symptoms resolved with prednisone, initiated at 50mg daily with a recommended slow taper, however resurfaced five days after he abruptly ceased treatment. He was subsequently started on methotrexate in combination with prednisone.

Both patients had a past medical history of non-rheumatological autoimmune disease, developed symptoms within 8 weeks of ICI, had elevated inflammatory markers and negative autoantibodies. Neither had to discontinue their cancer therapy and indeed both had a good tumour responses to their ICI. Both of our patients were initially well-managed prednisone. However, our second patient relapsed after abrupt cessation of his prednisone and required a combination of methotrexate with prednisone to control his symptoms.

Conclusions These cases add to the literature on ICI-induced polyarthritis, a rare ICI-AE. Clinical manifestations most commonly resemble rheumatoid arthritis, with bilateral inflammation of the small joints. Time to onset tends to be <12 weeks after ICI exposure, and repeated ICI exposure is a risk factor. Most patients have no personal or family history of autoimmune disease, negative autoantibodies, and can be managed well with glucocorticoids. As ICIs become more widely used, rheumatologists and oncologists alike should familiarize themselves with their adverse effects. More research is needed to understand the epidemiology, clinical presentation, and treatment of these adverse events.

Consent Written informed consent was obtained from the patients for publication of this abstract. A copy of the written consent is available for review by the Editor of this journal.