Management of toxicities of immune checkpoint inhibitors

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Immune checkpoint inhibition with the anti-CTLA-4 antibody ipilimumab and the anti-PD-1 antibodies nivolumab and pembrolizumab has improved survival in metastatic melanoma, lung cancer and renal cancer. Use of these agents holds promise in other malignancies. The augmented immune response enabled by these agents has led to a particular group of side effects called immune-related adverse events (irAEs). The main irAEs include diarrhea, colitis, hepatitis, skin toxicities and endocrinopathies such as hypophysitis and thyroid dysfunction. The anti-PD-1 antibodies have a different toxicity profile to ipilimumab with fewer high grade events. This article identifies the rates of common and uncommon irAEs associated with each immune checkpoint inhibitor (ICPI) and their timing of onset, focusing mainly on the experience in melanoma and lung cancer. An approach to management for each class of irAE is provided.