

MANAGING IMMUNE-MEDIATED ADVERSE EVENTS¹

Immune-mediated adverse events (imAEs) can occur with KEYTRUDA[®] (pembrolizumab) treatment. Risk of immune-mediated adverse reactions following immune-checkpoint inhibitor therapy may be increased in patients with pre-existing autoimmune disease (AID). Management should be based on the severity of the event. Most imAEs occurring during treatment with KEYTRUDA were reversible and managed with interruptions of treatment, administration of corticosteroids and/or supportive care. **ImAE reactions, including severe and fatal cases, have occurred in patients receiving KEYTRUDA. Please consult the appropriate SmPC, Risk Minimisation Materials and local toxicity protocols or guidance before making any prescribing decisions.**

Monitoring + investigations

Withhold KEYTRUDA and initiate corticosteroids*/other treatment

Discontinue KEYTRUDA

ENDOCRINOPATHIES

- Monitor for:
 - Adrenal insufficiency and hypophysitis (including hypopituitarism)
 - Hyperglycaemia and other diabetes signs and symptoms
 - Changes in thyroid function and clinical signs/symptoms of thyroid disorders
 - Exclude other causes
- Hypothyroidism**
- May be managed with hormone replacement without treatment interruption and without corticosteroids
- Grade 2 adrenal insufficiency and hypophysitis**
- Withhold treatment until controlled by hormone replacement
 - Corticosteroids and other hormone replacement as clinically needed
- Grade 3 or 4 adrenal insufficiency/type 1 diabetes associated with Grade >3 hyperglycaemia or ketoacidosis/Grade >3 hyperthyroidism[†]**
- Withhold until AEs recover to Grade 0/1[†] or discontinue
 - Insulin should be administered for type 1 diabetes

Long-term hormone replacement therapy may be necessary in cases of immune-mediated endocrinopathies

NEPHRITIS

- Monitor for changes in renal function
 - Exclude other causes
- Grade 2 with creatinine >1.5–<3 times ULN**
- Withhold until AEs recover to Grade 0/1[†]
 - Initiate corticosteroids at initial dose of 1–2 mg/kg/day
- Grade >3 with creatinine >3 times ULN**
- Permanently discontinue
 - Initiate corticosteroids at initial dose of 1–2 mg/kg/day

COLITIS

- Monitor for signs and symptoms of colitis
 - Exclude other causes
- Grade 2 or 3**
- Withhold until AEs recover to Grade 0/1[†]
 - Initiate corticosteroids at initial dose of 1–2 mg/kg/day
- Recurrent Grade 3 or 4**
- Permanently discontinue
 - Initiate corticosteroids at initial dose of 1–2 mg/kg/day

OTHER imAEs[§]

- Grade 2/3, based on severity and type of AE**
- Withhold until AEs recover to Grade 0/1[†]
 - Initiate corticosteroids
- Grade 3/4 myocarditis, encephalitis or Guillain-Barré syndrome**
- Permanently discontinue treatment
- Any Grade 4 or recurrent Grade 3 imAE**
- Permanently discontinue treatment



INFUSION-RELATED REACTIONS

- Grade 1/2**
- Monitor closely; consider premedication with antipyretic and antihistamine
- Grade 3/4**
- Permanently discontinue

PNEUMONITIS

- Monitor for signs and symptoms
 - Confirm suspected pneumonitis with radiographic imaging
 - Exclude other causes
- Grade 2**
- Withhold until AEs recover to Grade 0/1[†]
 - Initiate corticosteroids at 1–2 mg/kg/day
- Grade 3/4 or recurrent Grade 2**
- Permanently discontinue treatment
 - Initiate corticosteroids at 1–2 mg/kg/day

HEPATITIS

- Monitor for symptoms of hepatitis and changes in liver function as clinically indicated
 - Exclude other causes
- Grade 2 with AST or ALT >3–5 times ULN or total bilirubin >1.5–3 times ULN**
- Withhold until AEs recover to Grade 0/1[†]
 - Initiate corticosteroids at initial dose of 0.5–1 mg/kg/day
- Grade >3 with AST or ALT >5 times ULN or total bilirubin >3 times ULN**
- Permanently discontinue
 - Initiate corticosteroids at initial dose of 1–2 mg/kg/day
- Liver metastasis with baseline Grade 2 elevation of AST or ALT; hepatitis with AST/ALT increases >50% and lasts >1 week**
- Permanently discontinue

For RCC patients treated with KEYTRUDA in combination with axitinib with liver enzyme elevations, see separate dosing guidelines in SmPC

SKIN REACTIONS

- Monitor for suspected severe skin reactions
 - Exclude other causes
- Grade 3 or suspected Stevens-Johnson syndrome (SJS) or toxic epidermal necrolysis (TEN)**
- Withhold until AEs recover to Grade 0/1[†]
 - For suspected SJS or TEN, refer to specialised unit for assessment and treatment
- Grade 4/confirmed SJS or TEN**
- Permanently discontinue

Adverse events should be reported. Reporting forms and information can be found at <https://yellowcard.mhra.gov.uk/> or search for MHRA Yellow Card in the Google Play or Apple App Store. Adverse events should also be reported to MSD (Tel: 0208 154 8000).

^{*}When considering corticosteroids, assume prednisone or equivalent and ensure taper is complete. [†]For patients with G3 or G4 endocrinopathies that improved to ≤G2 and are controlled with hormone replacement, if indicated, continuation of KEYTRUDA may be considered after corticosteroid taper, if needed. Otherwise, treatment should be discontinued. [‡]Based on the severity of the adverse reaction, KEYTRUDA should be withheld and corticosteroids administered. Upon improvement to ≤G1, corticosteroid taper should be initiated and continued over at least 1 month. Based on limited data from clinical studies in patients whose imAEs could not be controlled with corticosteroid use, administration of other systemic immunosuppressants can be considered. KEYTRUDA may be restarted within 12 weeks after last dose of KEYTRUDA if the adverse reaction recovers to ≤G1 and corticosteroid dose has been reduced to ≤10 mg prednisone or equivalent per day. KEYTRUDA must be permanently discontinued for any G3 imAE that recurs and for any G4 imAE toxicity, except for endocrinopathies that are controlled with replacement hormones. [§]Other clinically significant imAEs include uveitis, arthritis, myositis, myocarditis, pancreatitis, Guillain-Barré syndrome, myasthenic syndrome, haemolytic anaemia, sarcoidosis, encephalitis, myelitis, vasculitis, sclerosing cholangitis, gastritis, cystitis (noninfective), hypoparathyroidism and pericarditis. AE, adverse event; AID, autoimmune disease; ALT, alanine transaminase; AST, aspartate aminotransferase; G, grade; imAE, immune-mediated adverse event; RCC, renal cell carcinoma; SmPC, Summary of Product Characteristics; ULN, upper limit of normal. 1. KEYTRUDA Summary of Product Characteristics. Available at: <https://www.medicines.org.uk/emc/product/2498/smpc>. Accessed: November 2025.