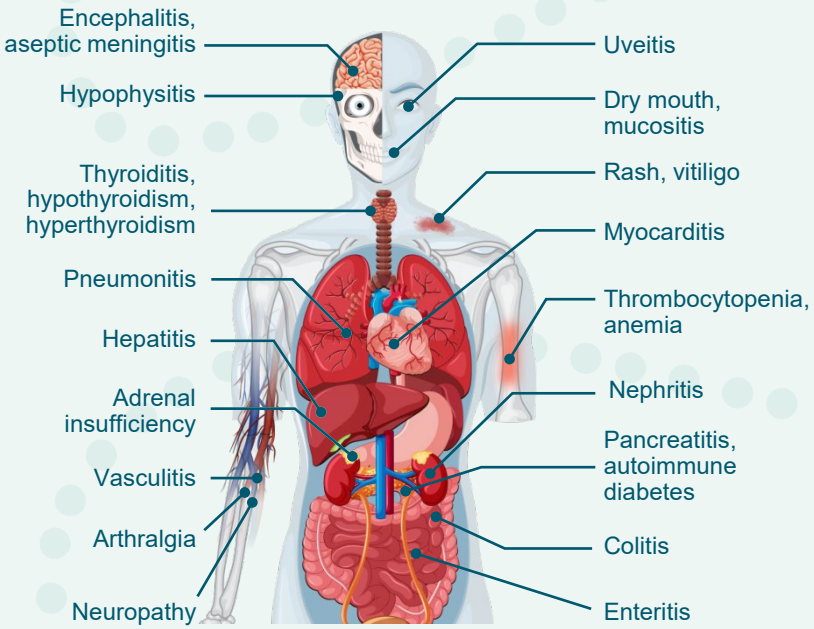
SOME PATIENTS TREATED WITH CHECKPOINT INHIBITORS MAY EXPERIENCE INFLAMMATORY REACTIONS TERMED "irAEs"

Checkpoint Inhibitors May Be Associated With Toxicities Caused by Activation of the Immune System

Potential irAEs in Patients Treated With Checkpoint Inhibitors



irAEs most commonly affect the skin, GI tract, and endocrine system

Detailed guidelines for management of irAEs are available, including ASCO and SITC guidelines

irAEs Differ From Chemotherapy-Related AEs

Compared with chemotherapy AEs, irAEs…

- May have **delayed onset** and **longer duration**
- May have an **unpredictable onset** and can **occur at any time** (even months or years after treatment ends)
- May have an **unclear relationship with dose** of therapy

Most irAEs Are Mild or Moderate in Severity, But Serious irAEs May Occur in Some Patients

Estimated incidence of irAEs, grade ≥3:

≤10% of patients on **anti–PD-1 or anti–PD-L1** therapy

15%–42% of patients on **anti–CTLA-4** therapy

irAE Management Requires Early Recognition and Involvement of a Multidisciplinary Team

- **Educate patients/caregivers** about irAEs
- **Exercise caution** (any new symptoms may be related to irAEs)
- **Consult specialists** (eg, dermatology, endocrinology)

Checkpoint proteins regulate tolerance to self antigens, and as a result, checkpoint blockade can lead to autoimmune reactions

Checkpoint inhibitors are associated with a well characterized pattern of inflammatory side effects called "irAEs"

There are important differences between irAEs and side effects from chemotherapy

Common irAEs include rash, dermatitis, diarrhea, colitis, hypophysitis, and thyroid disease

Patient education is a critical aspect of irAE management, and early recognition of irAEs is important for successful management

For additional content on this topic, please visit www.GemstoneOncology.com

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AE, adverse event; ASCO, American Society of Clinical Oncology; CTLA-4, cytotoxic T-lymphocyte–associated protein 4; GI, gastrointestinal; irAE, immune-related adverse event; PD-1, programmed cell death 1; PD-L1, programmed death ligand 1; SITC, Society for Immunotherapy of Cancer.

References: Brahmer JR, et al. *J Clin Oncol*. 2018;36(17):1714-68. Cole S, et al. *ASCO Educ Book*. 2019;39:96-104. Michot JM, et al. *Eur J Cancer*. 2016;54:139-48. Postow MA, et al. *N Engl J Med*. 2018;378(2):158-68. Puzanov I, et al. *J Immunother Cancer*. 2017;5(1):95.

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