55M with stage IV metastatic melanoma on nivolumab, recently started ipilimumab, presented with worsening shortness of breath and cough

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Daniel Chen, MD
CT noncontrast
Drug-induced lung disease
Dense Consolidation

Air Bronchogram
Drug-Induced Lung Disease

- Antineoplastic drugs are a common cause of lung injury
- The pathogenesis of the disease depends on the type of chemotherapeutic agent
- Some of the mechanisms include:
  - Direct injury to the pneumocytes
  - Cytokine release leading to alveolar injury
  - Cell-mediated injury due to lymphocyte activation.
- Common drugs causing lung injury include:
  - Bleomycin
  - Cyclophosphamide
  - Methotrexate
  - Gemcitabine
  - Vinblastine
Ipilimumab Pneumonitis

• Ipilimumab
  – Anti-cytotoxic T-lymphocyte antigen 4 (CTLA-4) leading to inhibition of negative regulators of T-cells and increasing antitumor immune activity.

• Multiple case reports of pneumonitis secondary to ipilimumab use. Typical onset 8-14 weeks after initiation
  – Cases with cryptogenic organizing pneumonia (COP), nonspecific interstitial pneumonia (NSIP), etc.
Management

• Discontinuation of immunotherapy agent
• Consider glucocorticoids based on patient presentation and severity of disease
• If infection suspected, empirical antimicrobials may be initiated
• Supportive therapy:
  – Bronchodilators
  – Oxygen
References

