NHS
The Clatterbridge Cancer Centre
NHS Foundation Trust

Immune-Related Adverse Event: Pneumonitis

Pulmonary irAEs have been observed following treatment with immunotherapy and have occurred after a single dose and after as many as 48 treatments. The frequency of pulmonary AEs may be greater with immunotherapy combination therapies than with monotherapy. The majority of cases reported were Grade 1 or Grade 2 and subjects presented with either asymptomatic radiographic changes (eg, focal ground glass opacities, patchy infiltrates) or with symptoms of dyspnoea, cough, or fever. Subjects with reported Grade 3 or Grade 4 pulmonary AEs were noted to have more severe symptoms, more extensive radiographic findings, and hypoxia.

Mild (Grade 1)

Clinically asymptomatic *with* Radiographic changes only
(e.g focal ground glass opacities, patchy infiltrates)

Clinical Assessment & O2 SATS

Investigations:

- Sputum sample for MC&S
- Baseline bloods (FBC, U&E's, LFT's, CRP, calcium)
- Procalcitonin
- CT Imaging and baseline X-Ray

To exclude a-typical infections:

- Beta-D-Glucan/Galactomannan
- A-typical Viral Screen
- Covid Swab
- Urine legionella and pneumococcal antigen
- Mycoplasma Serology

Actions:

- Monitor symptoms weekly and re-image if worsening.
- Consider delay of Immunotherapy.
- Consider 30mg of Prednisolone with a weaning course.
- Refer to IO Toxicity Service.

Symptoms: WORSEN

Moderate (Grade 2)

Mild to moderate new onset of symptoms limiting instrumental ADL
(e.g dyspnoea, cough, fever, chest pain)

Clinical Assessment & O2 SATS

As per mild (grade 1) +

Investigations:

- CT imaging as symptomatic for CTPA to exclude PE as a differential (if CTPA –ve for pathology but suspicion of Pneumonitis remains complete HRCT

To exclude a-typical infections:

- Beta-D-Glucan/Galactomanan
- A-typical Viral Screen
- Covid Swab
- Urine legionella and pneumococcal antigen
- Mycoplasma Serology
- Sputum for PJP

Treatment:

- Prednisolone 1mg/kg/day (max. 60mg/day prednisolone) + gastric protection.
- If evidence of infection consider ABX as per local protocol
- Optimise underling respiratory condition e.g. COPD.

Actions:

- Hold immunotherapy.
- Monitor symptoms.
- Clinical examination review if symptoms worsening (with repeat imaging).
- Refer to IO Toxicity Service.

Severe/Life-Threatening (Grade 3+ 4)

Severe new onset of symptoms limiting self-care ADL; *or*
Hypoxia (new or worsening); *or*
ARDS

Clinical Assessment & O2 SATS

Consider Admission

As per moderate (grade 2) +

Investigations:

- Pulmonary function test.

Treatment:

- IV Methylprednisolone 2mg/kg/day + gastric protection.
- Oxygen therapy.
- Consider *increasing* to 4mg/kg/day *if* clinical improvement is unsatisfactory
- If evidence of infection consider ABX as per local protocol.
- Optimise underling respiratory condition e.g. COPD.

Actions:

- Consider discontinuing Immunotherapy.
- Refer to a chest physician.
- Monitor symptoms daily with clinical examination and repeat imaging as indicated, if symptoms worsening, repeat imaging is required.
- Consider Second line Immunosuppression with Tacrolimus (MMF and Infliximab can be considered as alternative).
- Referral to Interstitial Lung MDT.
- Consider referral to Chest Physician and Bronchial Alveolar Lavage.
- Refer to IO Toxicity Service
  When resolving see steroid tapering guidance.

Assess response to treatment within 72 hours

Symptoms: Resolve or Improve to Mild See steroid tapering guidance

PERSIST or WORSEN or RELAPSE

Assess response to treatment, if no improvement within 72 hours, seek chest physician advice for further advice and management. Conisder CCC subsequent management guidelines

Interrupt SACT immunotherapy until discussed with Acute Oncology Team. Please contact on-call oncology/haematology team for advice. Ensure that the patient has monitoring/follow up planned with their oncology/immuno-oncology team.