2026 California Thoracic Society Annual Educational Conference

& Chronic Obstructive Pulmonary Disease Symposium

Thursday March 12, 2026-Sunday March 15, 2026

Earn up to 19 CME/CEU/MOC Credits

Jointly Provided by AKH Inc., Advancing Knowledge in Healthcare and the California Thoracic Society

PORTOLA HOTEL & SPA
AT MONTEREY BAY

Thursday March 12, 2026 (6 CME/CEU/MOC Credits)
COPD Symposium
Friday March 13, 2026 (6.5 CME/CEU/MOC Credits):
Advances in Interventional Pulmonary, Remote Monitoring in Pulmonary and Sleep Medicine, Approach to Symptom Management in Chronic Lung Disease and Critical Care
Saturday March 14, 2026 (6.5 CME/CEU/MOC Credits)
Sepsis and Shock, Extracorporeal Membrane Oxygenation, Inpatient Pulmonary Complications of Cancer Care
Sunday March 15, 2026
Fellow and Resident Track Symposium

California Thoracic Society
ATS Chapter Serving California and Arizona

AKH INC.
ADVANCING KNOWLEDGE IN HEALTHCARE

California Thoracic Society
Annual Conference
March 12-15, 2026
Portola Hotel and Spa, Monterey, CA

Saturday March 14, 2026

Advances in Management of the Patient with Sepsis

8:00 am – 8:10 am: Welcome and Introduction

8:10 am – 8:55 am: Keynote Address – Phenotyping and Personalized Medicine in Sepsis

- **Angela Rogers, MD (Stanford)** - This speaker will discuss phenotyping in the patient with sepsis and septic shock and how close we are to precision medicine in managing sepsis.

8:55 am – 9:20 am: Incorporating Artificial Intelligence Decision Making in Identifying Sepsis

- **Gabriel Wardi, MD (UC San Diego)** - This speaker will describe how artificial intelligence can be used to identify the septic patient before they present with end stage symptoms to impact care earlier in the course of illness.

9:20 pm – 9:35 pm: Pro: The Severe Sepsis and Septic Shock Early Management Bundle (SEP-1) Bundle Saves Lives

- **Sean Townsend, MD (CPMC-Sutter)**- This speaker will argue the benefits of the SEP-1 Bundle/how it saves lives.

9:35 pm – 9:50 pm: Con: : The Severe Sepsis and Septic Shock Early Management Bundle (SEP-1) Bundle Does Not Save Lives

- **Natalie Achamallah, MD, MS (Cottage Health)** - This speaker will argue the against the SEP-1 Bundle/highlight its limitations.

9:50-10:00 am Question and Answer

10:00 am – 10:30 am: Break

Extracorporeal Membrane Oxygenation

10:30 am – 10:55 am: When to refer to an ECMO center and when to deploy ECMO

- **Nida Qadir, MD (UC Los Angeles)** - This speaker will discuss the evidence behind the use of ECMO in patients with respiratory failure and when providers should consider referral to an ECMO center and when centers should use ECMO.

10:55 am – 11:20 am: What about ECMO to go?

- **Mazen Odish, MD (UC San Diego)** - This speaker will discuss the advent of mobile ECMO services, how they can help improve patient care, and the use of extracorporeal cardiopulmonary resuscitation.

11:20 am – 11:45 pm: Ventilator Strategies for the patient on ECMO

- **Abirami Kumaresan, MD (Cedars-Sinai)** - This speaker will discuss the how ventilator strategies may differ in the patient on ECMO and how different ECMO configurations impact which ventilator strategy to use.

11:45 pm – 12:10 pm: What you need to know about pediatric ECMO

- **Kathleen Ryan, MD (Stanford)** - This speaker will discuss the utility of ECMO in neonates and children, and the complexities of management in children who needs mechanical support.

12:10 pm – 12:20 pm: Question and Answer

12:20 pm – 1:20 pm: Lunch

Hands-On Session:

1:20 pm – 2:20 pm: Non-Invasive Cardiac Output Monitors **Speaker Abirami Kumaresan, MD (Cedars-Sinai)** ECMO Machines **Mazen Odish, MD (UC San Diego)** ECMO Placement **David Gordon, DNP (UC San Francisco) & Brianna Zuckerman, NP (UC San Francisco)** Ventilator Settings and Portable ventilators **Joe Van Vleet, RT (UC Los Angeles) & Theresa Cantu, RT (Valley Children's)**

2:20 pm – 2:45 pm: Break

Inpatient and Pulmonary Complications of Cancer Care

2:45 pm – 3:10 pm: Pulmonary Complications of Hematopoietic Stem Cell Transplantation

- **Husham Sharifi, MD (Stanford)** - This speaker will discuss the pulmonary complications that arise after HCT, in particular the development of bronchiolitis obliterans syndrome and approaches to management.

3:10 pm – 3:35 pm: Pulmonary Vascular Complications of Malignancy

- **Naomi Habib, MD (Norton Thoracic Institute)**- This speaker will discuss the Pulmonary Vascular Disease complications of malignancy including PA sarcoma, pulmonary tumor thrombotic microangiopathy, and medications that can cause PAH.

3:35 pm – 4:00 pm: Drug induced Interstitial Lung Disease and Pneumonitis During Cancer Therapy

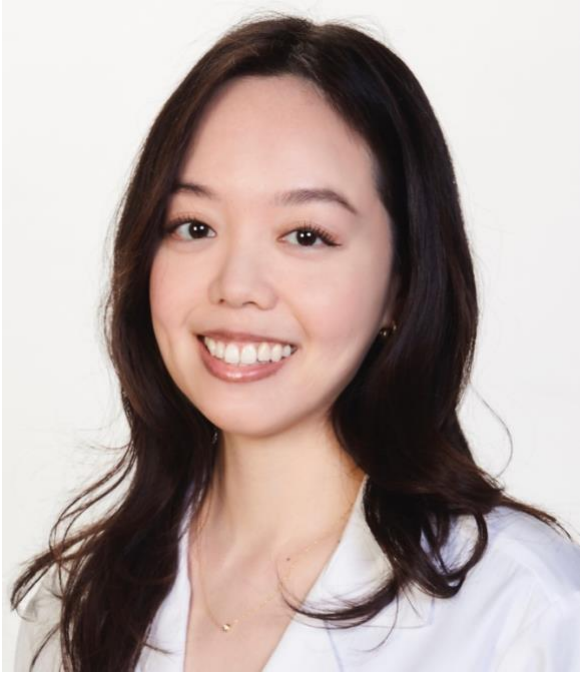
- **Weijia Chua, MD (Stanford)** - This speaker will discuss the pulmonary complications of interstitial lung disease and pneumonitis that develop after chemotherapy and targeted immunotherapy

4:00 pm – 4:25 pm: Respiratory Complications of Acute Leukemia

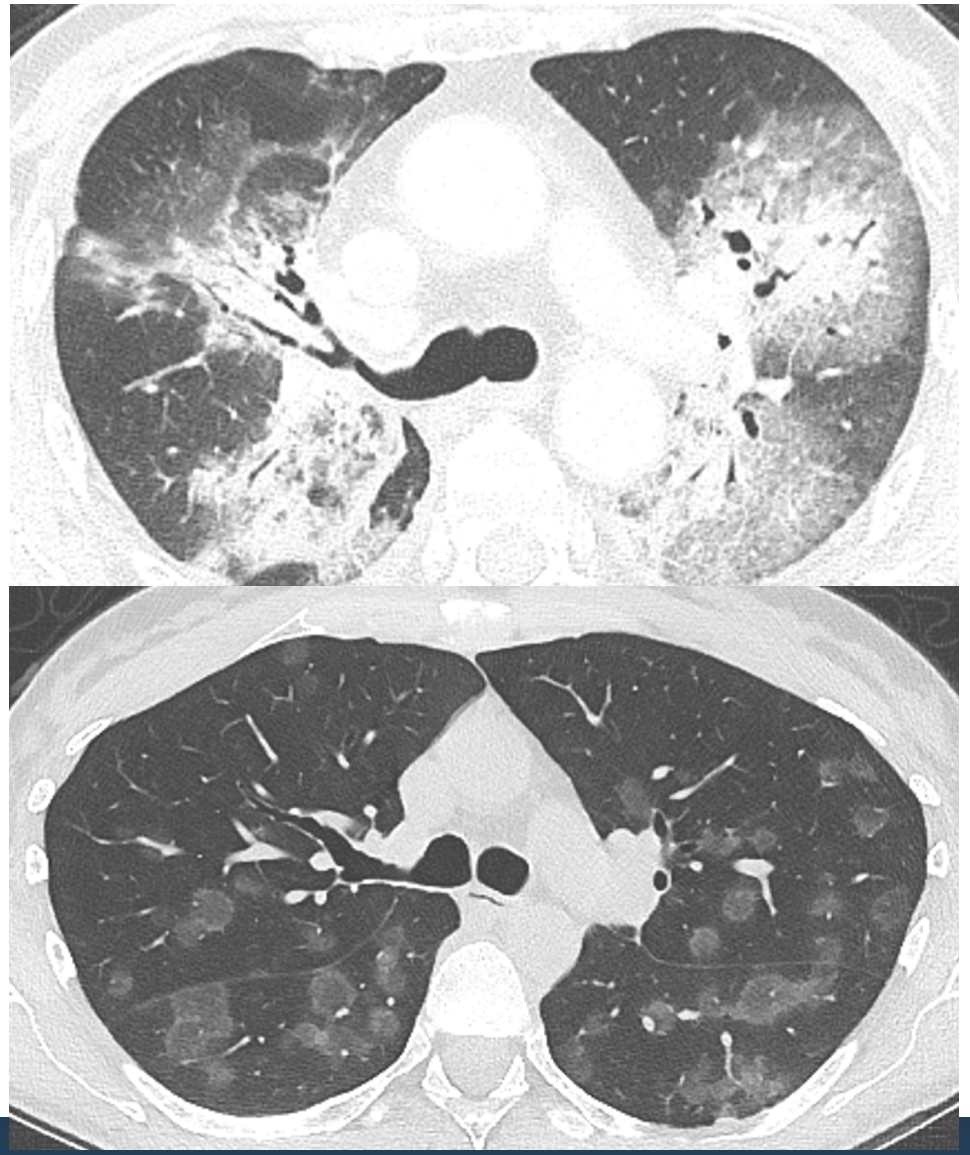
- **Hugh Davis, MD (City of Hope)** - The speaker will discuss various oncologic emergencies, how they are recognized, and how they are managed in the acute setting.

4:25 pm – 4:35 pm: Question and Answer

5:30 pm – 7:30 pm: Trainee Poster Competition (NON-CME) – Food and beverages will be served



Dr. Weijia Chua is a Clinical Assistant Professor of Medicine at Stanford University who specializes in seeing patients with lung nodules and cancer therapy related pneumonitis. She completed her medical degree at UC Davis, followed by Internal Medicine training at UCLA, and Pulmonary and Critical Care Fellowship at Cedars-Sinai.



Pneumonitis from Cancer Therapies for Solid Malignancies

Focus on Checkpoint Inhibitor Pneumonitis

Weijia Chua, MD

Clinical Assistant Professor

Division of Pulmonary, Allergy & Critical Care

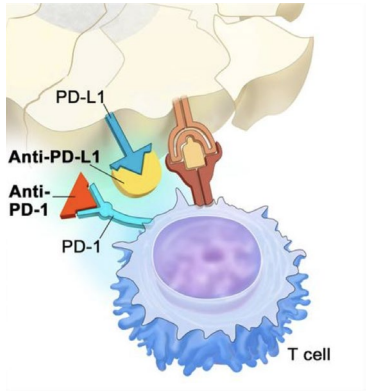
Stanford University, School of Medicine

California Thoracic Society
ATS Chapter Serving California and Arizona

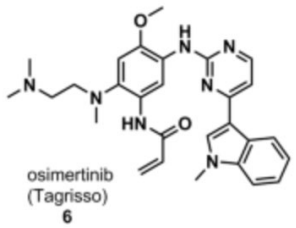
Disclosures

- I have no disclosures or relationships with ACCME defined ineligible companies

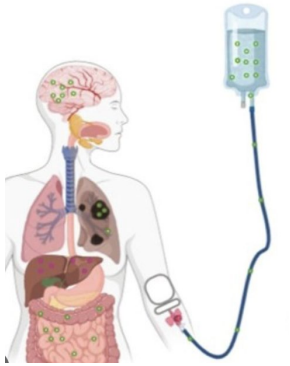
A decade ago…



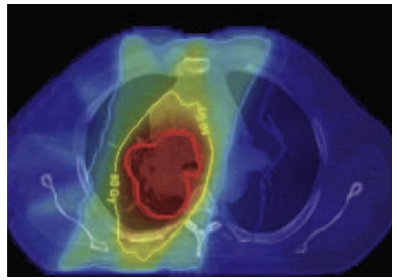
Immune Checkpoint Inhibitors



Molecularly Targeted Agents



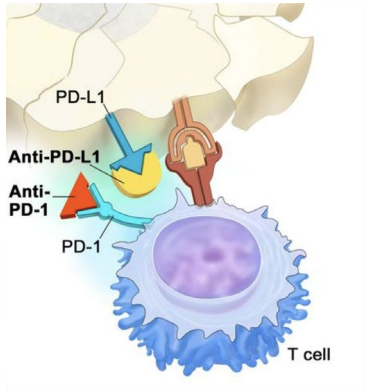
Traditional Chemotherapy



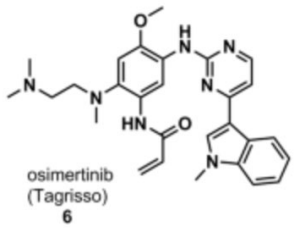
Radiation

Swain et al. Cancer Treatment Rev 202
www.cancer.gov
do Amaral et al. Sci Rep 2019
blog.dana-farber.org/

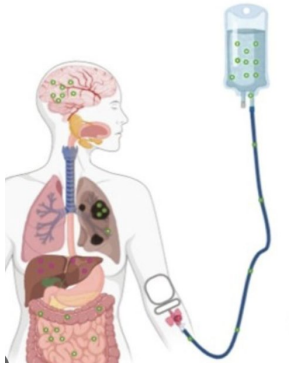
Today:



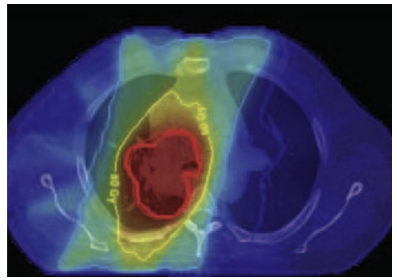
Immune Checkpoint Inhibitors



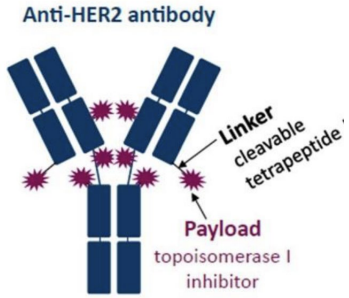
Molecularly Targeted Agents



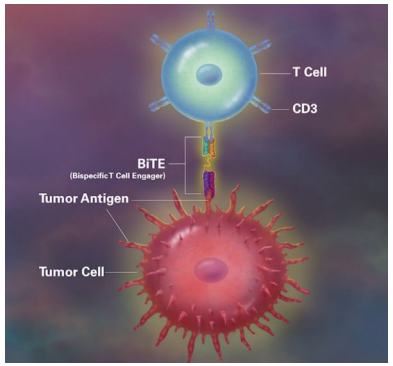
Traditional Chemotherapy



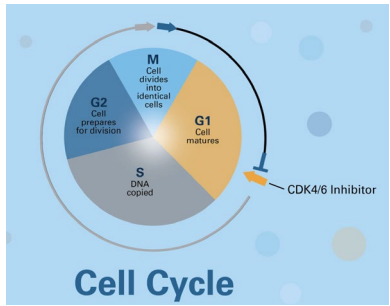
Radiation



Antibody-Drug Conjugates



Bispecific Antibodies



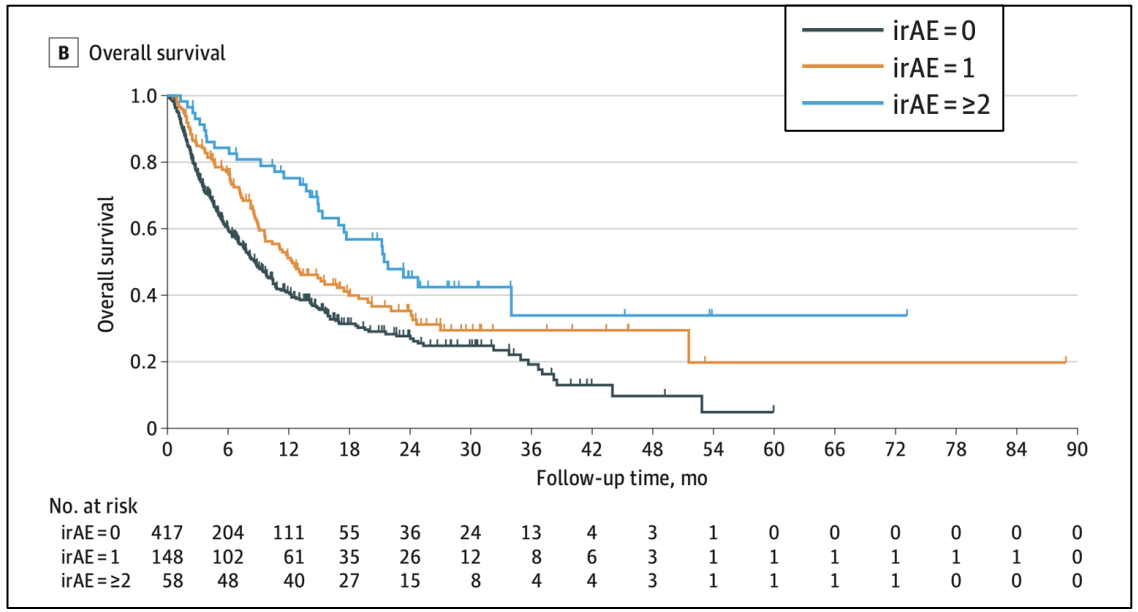
CDK 4/6 Inhibitors

Swain et al. Cancer Treatment Rev 202
www.cancer.gov
do Amaral et al. Sci Rep 2019
blog.dana-farber.org/

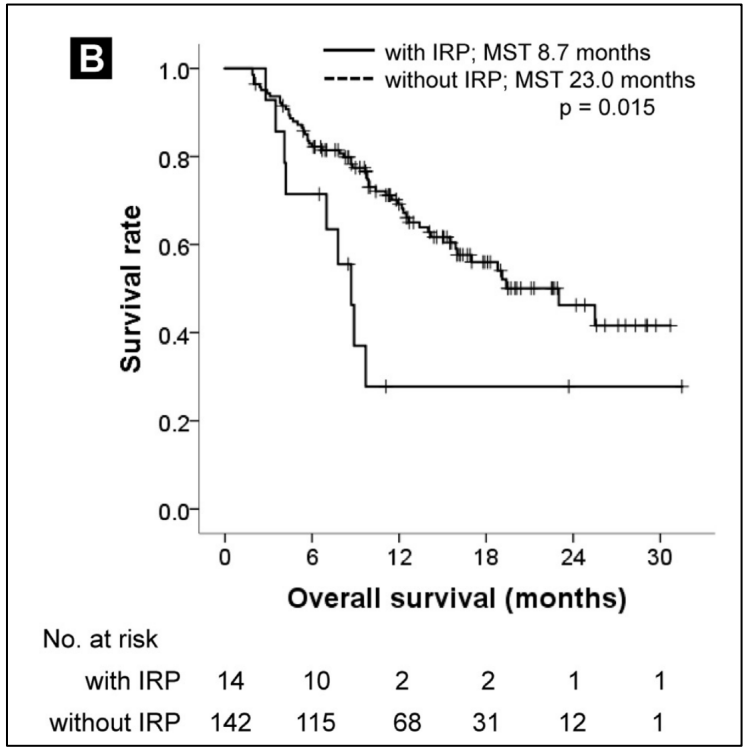
Outline

- Management of ICI Pneumonitis
- Major society management guidelines and their limitations
- Steroid-refractory and steroid dependent pneumonitis
- Movement towards utilizing steroid-sparing immunosuppressants

ICI pneumonitis is a source of significant mortality



Most irAEs are associated with improved survival



ICI pneumonitis associated with worse survival (in NSCLC) regardless of grade

Leading cause of treatment discontinuation and treatment related death (35%)

Shankar et al. JAMA Oncology 2020
Fukihara et al. Clin Lung Cancer 2019

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Guidelines

Management by CTCAE Grade

SITC/ASCO 2021
ESMO 2022, NCCN 2025

Brahmer et al. JITC 2021
Hannen et al. J Ann Onc 2022
Schneider et al. J Clin Oncol 2021

Guidelines

Management by CTCAE Grade

Grade 1: Asymptomatic

Confined to 1 lobe or <25% of lung parenchyma

SITC/ASCO 2021
ESMO 2022, NCCN 2025

Consider Holding Therapy
Consider CT chest 3-6 wks

Brahmer et al. JITC 2021
Hannen et al. J Ann Onc 2022
Schneider et al. J Clin Oncol 2021

Guidelines

Management by CTCAE Grade	SITC/ASCO 2021 ESMO 2022, NCCN 2025
Grade 1: Asymptomatic Confined to 1 lobe or <25% of lung parenchyma	Consider Holding Therapy Consider CT chest 3-6 wks
Grade 2: Symptomatic >1 lobe or 25%-50% of lung parenchyma	Hold Therapy **Prednisone 1-2mg/kg,** Taper over 4-6wks

Brahmer et al. JITC 2021
Hannen et al. J Ann Onc 2022
Schneider et al. J Clin Oncol 2021

Guidelines

Management by CTCAE Grade	SITC/ASCO 2021 ESMO 2022, NCCN 2025
Grade 1: Asymptomatic Confined to 1 lobe or <25% of lung parenchyma	Consider Holding Therapy Consider CT chest 3-6 wks
Grade 2: Symptomatic >1 lobe or 25%-50% of lung parenchyma	Hold Therapy **Prednisone 1-2mg/kg,** Taper over 4-6wks
Grade 3: New or worse hypoxemia Grade 4: Life threatening (HFNC or Ventilator)	Discontinue Therapy **Methylprednisolone IV 1-2mg/kg,** Taper over 4-8+wks
Steroid Refractory: No improvement in 48-72 hrs	MMF, IVIG, infliximab, cyclophosphamide, tocilizumab NCCN 2025 UPDATES

Brahmer et al. JITC 2021
Hannen et al. J Ann Onc 2022
Schneider et al. J Clin Oncol 2021

- Retrospective study from The Ohio State of **132 patients** with ICI pneumonitis
- Stratified based on receiving **< 1mg/kg** or or **≥ 1mg/kg prednisone**
- Initial treatment with **< 1mg/kg prednisone associated with increased risk of developing steroid-refractory** or only partially steroid responsive pneumonitis

Table 5. Risk factors for partially steroid-responsive or steroid-refractory ICI-p.

Variable		Steroid-responsive ICI-p ($n = 58$)	Partially steroid-responsive or steroid-refractory ICI-p ($n = 74$)	*P*-value
Steroids < 1 mg/kg (prednisone equivalent) at ICI-p diagnosis	Yes	19 (32.8)	40 (54.1)	.014
	No	39 (67.2)	34 (45.9)	

Supplementary Table 1: Corticosteroid Dosing for ICI-p[a]		
	< 1 mg/kg prednisone equivalent corticosteroids	>/= 1 mg/kg prednisone equivalent corticosteroids
Dose (mg, median, IQR)	60 (40, 60)	82.5 (60, 125)
Dose (mg/kg, median, IQR)	0.67 (0.54, 0.85)	1.06 (1.0, 1.4)

Moodabagil et al. The Oncologist 2024.

- Prospective study from Japan
- **56 patients** with **grade 2 or higher** ICI pneumonitis
- Treated with **oral prednisolone 1mg/kg tapered over 6 weeks**
- Grade 3 or 4 allowed initial treatment with IV steroid ~3 days
- Primary endpoint: Pneumonitis control rate at 6wks (determined radiographically as completely or partially recovered)
- Secondary endpoints: Pneumonitis control rate at 12wks, cumulative incidence of relapse

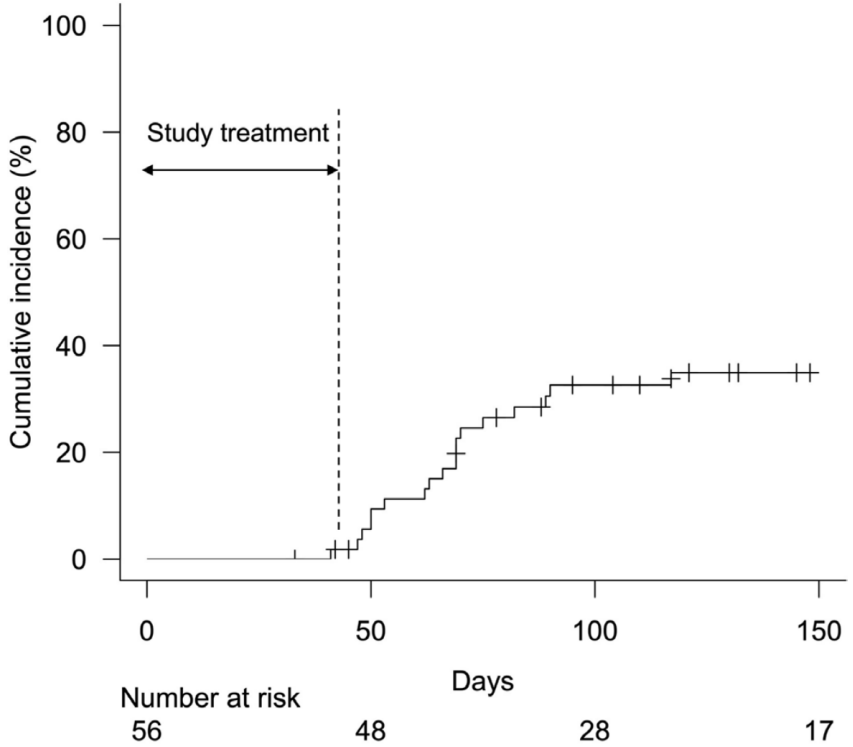


Figure 4 Cumulative incidence of relapse of immune-related pneumonitis. Short bars indicate censored cases.

	Controlled	Relapse
6 weeks	51 (**91%**)	4 (7.1%)
12 weeks	32 (**57.1%**)	15 (**26.8%**)

Karayama et al. JITC 2023

Guidelines

Management by CTCAE Grade	SITC/ASCO 2021 ESMO 2022, NCCN 2025
Grade 1: Asymptomatic Confined to 1 lobe or <25% of lung parenchyma	Consider Holding Therapy Consider CT chest 3-6 wks
Grade 2: Symptomatic >1 lobe or 25%-50% of lung parenchyma	Hold Therapy **Prednisone 1-2mg/kg,** Taper over 4-6wks
Grade 3: New or worse hypoxemia Grade 4: Life threatening (HFNC or Ventilator)	Discontinue Therapy **Methylprednisolone IV 1-2mg/kg,** Taper over 4-8+wks
Steroid Refractory: No improvement in 48-72 hrs	MMF, IVIG, infliximab, cyclophosphamide, tocilizumab NCCN 2025 UPDATES

Brahmer et al. JITC 2021
Hannen et al. J Ann Onc 2022
Schneider et al. J Clin Oncol 2021

Steroid-refractory and Chronic Pneumonitis

But there are a significant number of patients that develop

- Steroid-refractory pneumonitis
  - No clinical improvement after up to **72 hours** of appropriate steroid therapy
  - **10-20%** of pneumonitis patients

- Steroid dependent pneumonitis (aka Chronic Pneumonitis)
  - Flared during steroid taper
  - Requiring **3+ months** of ongoing steroids
  - **14-30%** of pneumonitis patients

Naidoo et al. JITC. 2020
Camard et al. Respir Med and Res. 2022
Balaji et al. JITC. 2021
Patrinely et al. JAMA Oncol 2021.

NCCN 2025 Guideline Updates for Steroid-refractory Pneumonitis

- Previously ESMO/SITC/ASCO guidelines for steroid-refractory pneumonitis recommended adding additional agent:
  - MMF, IVIG, infliximab, cyclophosphamide, tocilizumab
  - No recommendation for one agent over another

- NCCN Updated guidelines in 2025 for ICI Related Toxicities:

Severe (G3–4)[e] pneumonitis[a]

- **IV methylprednisolone 1–2 mg/kg/day. Assess response within 48 hours and plan taper over ≥6 weeks[f]**
- **Consider adding any of the following if no improvement after 48 hours:**
  - **Preferred:**
    - ◊ **IVIG[p]**
    - ◊ **Tocilizumab[q]**
  - **Other recommended:**
    - ◊ **Mycophenolate mofetil 1–1.5 g BID then taper in consultation with pulmonary service[m]**
      - **Consider mycophenolate mofetil as a steroid-sparing immunosuppressant for steroid-dependent pneumonitis at the time of steroid tapering[m]**
    - ◊ **Infliximab[r] 5 mg/kg, a second dose may be repeated 14 days later at the discretion of the treating provider**

NCCN National Comprehensive Cancer Network®

Data on management of steroid-refractory pneumonitis is limited

Data to support the different adjunctive immunosuppressants in steroid-refractory pneumonitis is limited to small retrospective studies and case series/reports

Infliximab and IVIG: 2 case series

- Johns Hopkins, **12 patients**
  - **IVIG 4 out of 7 (57%)** stabilized or improved
  - **Infliximab 1 of 2** improved, but subsequently died of infection
  - **IVIG + infliximab 2 of 3** transiently improved, but eventually died of pneumonitis
- MSKCC, **12 patients** all treated with **infliximab**
  - **6 of 12** with transient response
  - **3 of 12** with durable response (8 weeks+)

- Suggesting better outcomes and lower risk of infection with IVIG vs. infliximab
- Limited by small numbers and combination therapy

Balaji et al. JITC 2021.
Beattie at al. JITC 2021.

Tocilizumab in steroid-refractory pneumonitis

- Increasing interest based on use in other irAEs
- Evidence in pneumonitis specifically, is limited to mostly case studies

- Single center retrospective study from East Carolina University conducted from 2015-2016
  - 34 patients (already on steroids) received **tocilizumab for irAE grade 3 or 4**
  - **12 patients with pneumonitis**
    - **11 noted to have clinical improvement**
    - But did not specify what defined clinical improvement
    - Did not specify why tocilizumab was given
    - Did not specify whether steroid-refractory

Stroud et al. J Oncol Pharm 2019.

Steroid dependent pneumonitis (Chronic pneumonitis)

NCCN 2025 guidelines for ICI related toxicities:

Moderate (G2)[c,d]	• **Prednisone/IV methylprednisolone 1–2 mg/kg/day[l]** ▸ **Consider mycophenolate mofetil as a steroid-sparing immunosuppressant for steroid-dependent pneumonitis at the time of steroid tapering[m]**
Severe (G3–4)[e] pneumonitis[a]	▸ **Other recommended:** ◊ **Mycophenolate mofetil 1–1.5 g BID then taper in consultation with pulmonary service[m]** – **Consider mycophenolate mofetil as a steroid-sparing immunosuppressant for steroid-dependent pneumonitis at the time of steroid tapering[m]**

Data limited to case series and case reports primarily utilizing

- Prolonged steroids
- Infliximab, MMF

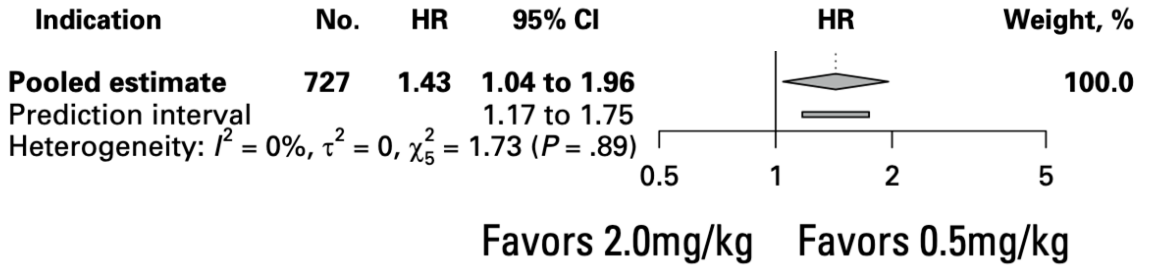
Anecdotally, success with both tocilizumab and infliximab
Generally start steroid sparing agent after first flare

NCCN Guidelines ICI Related Toxicities 10-23-25
Naidoo et al. JITC 2020.

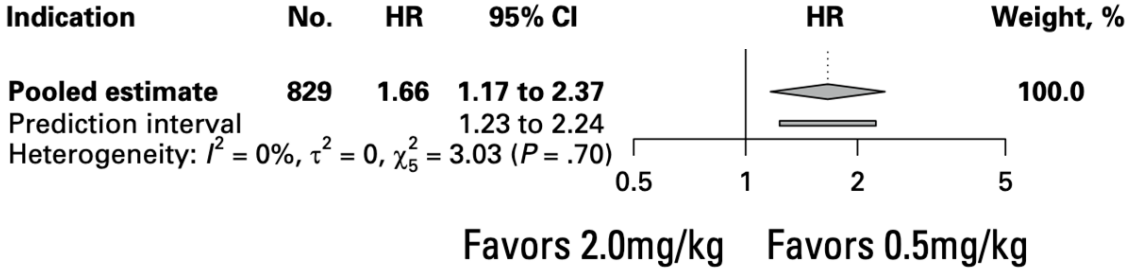
Peak steroid dose associated with worse survival

- Several retrospective studies showing association between high steroid doses and worse PFS and OS
- Pooled analysis of 6 phase II/III trials ipi/nivo
- **834** patients with irAEs
- Peak steroid dose associated **worse PFS and OS**
- Even when corrected for grade of irAE
- No association between cumulative steroid dose and outcomes

PFS



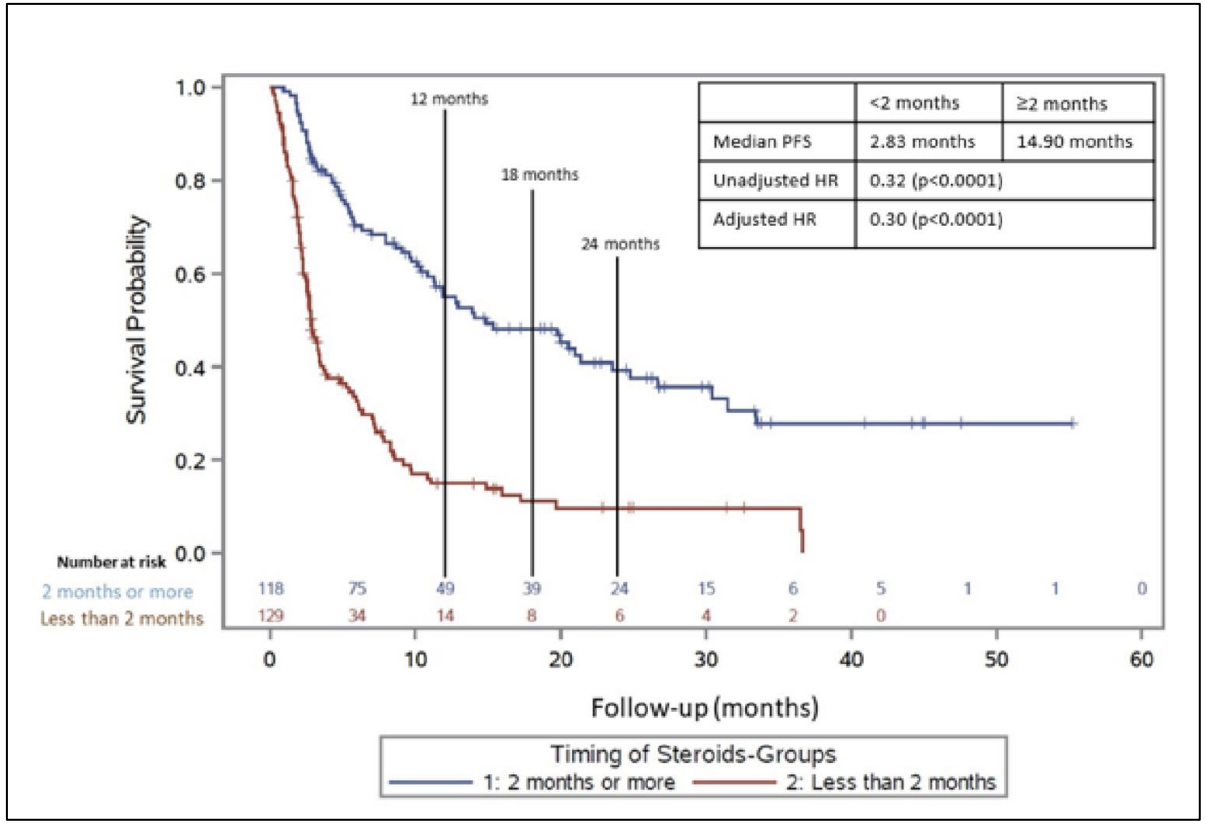
OS



Bai et al. Clin Cancer Res 2021.
Verheijden et al. J Clin Oncol 2024.

Early steroids post-ICI associated with worse outcomes

- Retrospective single center study
- **247 patients** who received steroids during ICI treatment
- Median time on steroids 1.8 months
- Multivariable analysis adjusting for treatment type, tumor type, brain metastases and irAEs
- Steroid use **<2months** after starting ICI associated with **worse ORR, PFS**, and **OS vs steroid use ≥ 2months**
  - **Objective response rate** (38.8% vs 14.7%; P=<0.001)
  - **Progression free survival** (HR 0.30; P=<0.001)
  - **Overall survival** (HR 0.34; P<0.0001)



	<2 months	≥2 months
Median PFS	2.83 months	14.90 months
Unadjusted HR	0.32 (p<0.0001)	
Adjusted HR	0.30 (p<0.0001)	

Progression Free Survival

Maslov et al. JITC 2021.

Ongoing studies of IL-6 blockade as irAE prophylaxis

- Several ongoing clinical trials of **IL-6/IL-6R blockers as irAE prophylaxis** given in conjunction with immune checkpoint inhibitors

- Phase 2 single arm study of **sarilumab** (IL-6Ri) with ipilimumab/nivolumab/relatlimab in unresectable stage III/IV melanoma
  - ASCO 2025
  - 33 patients
  - At 24wks, **12.1%** experience **grade 3/4 irAEs** (Lower than published rates ~30-60%)
  - Partial and complete **response rate of 63.6%** (Published rates ~40-60%)
  - Suggests IL-6 blockade may reduce toxicity while preserving efficacy
  - Randomized cohort ongoing

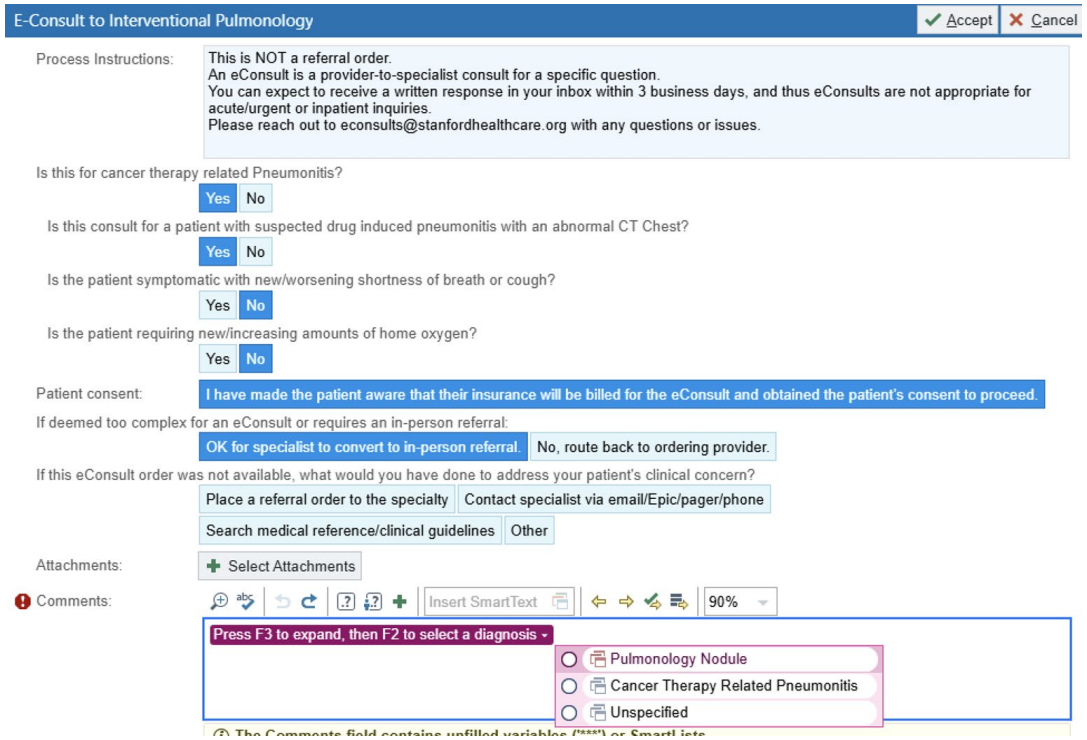
Mehnert et al. ASCO 2025.

Pneumonitis initiatives at Stanford

- Timely evaluation for pneumonitis patients is a crucial part of their clinical care
- Can be challenging in a busy academic or community clinic

System-based initiatives

- E-consult for pneumonitis
- EPIC workflow to streamline pneumonitis referral for triage into clinic
- Monthly multidisciplinary irAE tumor board



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Final Thoughts

Managing ICI pneumonitis is very challenging due to the unknowns and lack of scientific guidance on management.

We need more clinical research and understanding of mechanisms to improve outcomes.