What Is the Dose-Response Relationship Between Corticosteroids and Outcomes in Adults Who Are Hypoxic and Non-HIV Immunocompromised With PCP?

STUDY DESIGN

Multicenter retrospective cohort analysis of adults who were **hypoxic, hospitalized, and non-HIV immunocompromised** with **proven or probable *Pneumocystis jirovecii* pneumonia (PCP)** from 2019 to 2025

- Corticosteroid exposure modeled as a continuous, cumulative time-varying dose over 21 days using marginal structural models

RESULTS

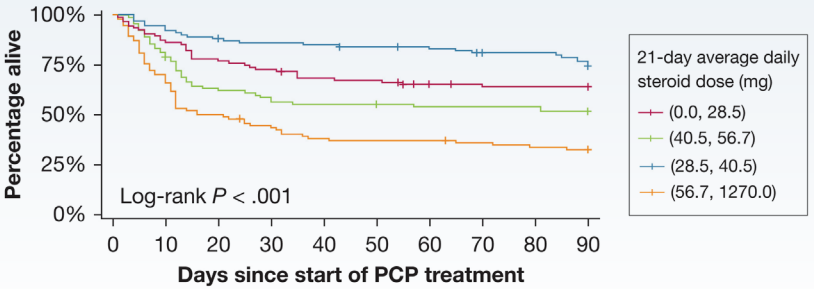
375 patients identified
93.6% received corticosteroids
56.3% required ICU admission
44.0% died within 90 days

Steroid exposure was not associated with

- Risk of intubation (HR, 0.99; 95% CI, 0.97-1.02)
- Faster liberation from advanced respiratory support (HR, 1.00; 95% CI, 0.98-1.02)

↑ Cumulative steroid dose associated with ↑ risk of 90-day mortality (weighted HR, 1.01 per 100 mg prednisone-equivalent; 95% CI, 1.00-1.02; $P = .006$)

KM Curve of 90-Day Mortality by Steroid Dose Quartile



This study suggests that in patients with non-HIV PCP with hypoxemia, higher cumulative corticosteroid exposure was not associated with improved respiratory outcomes and was linked to increased mortality, indicating that use of doses exceeding trial-tested regiments should be approached with caution.

Pulsipher AM, et al. *CHEST* March 2026 | @journal_CHEST | https://doi.org/10.1016/j.chest.2025.10.036