

INTRODUCTION

- Psoriasis is a chronic autoimmune skin disease associated with inflammatory comorbidities.¹
- Recently, associations between psoriasis and pulmonary diseases such as asthma, chronic obstructive pulmonary disease (COPD), pulmonary hypertension, and obstructive sleep apnea have been reported.⁷
- COPD is characterized by diffuse pulmonary inflammation and has the highest morbidity and mortality rates among all chronic respiratory conditions.²
- Few studies have examined whether psoriasis can worsen disease outcomes in patients with chronic obstructive pulmonary disease (COPD).³⁻⁶

AIMS

- Aim 1:** To evaluate the incidence of COPD in patients with psoriasis.
- Aim 2:** To evaluate whether COPD patients with psoriasis have worse pulmonary outcomes, including mortality, compared to those without psoriasis.

METHODS

- This retrospective cohort study utilized Optum's Clinformatics Data Mart (CDM) 2007-2023 data of U.S. adults.
- To evaluate COPD incidence, we 481,076 patients with psoriasis and 43,624,233 psoriasis-free controls.
- To evaluate COPD outcomes, we identified 61,444 adults with a history of COPD and psoriasis (n=61,444) and 2,740,302 psoriasis-free adults with a history of COPD.
- Multivariable Cox regression analysis adjusted for sociodemographic and clinical covariates, was used to compare the risk of pulmonary complications, including mortality, in COPD patients with psoriasis compared to COPD patients without psoriasis.

RESULTS

Table 1: Study Population Sociodemographic Characteristics

Characteristics	Total (n=2,801,746)	Patients with psoriasis (n = 61,444)	Patients without psoriasis (n = 2,740,302)
Age, Median (IQR)	76 (68, 84)	75 (68, 82)	76 (68, 84)
Sex			
Female	1,707,213 (54.0%)	38,389 (54.0%)	1,688,824 (54.0%)
Male	1,472,060 (46.0%)	32,092 (46.0%)	1,439,968 (46.0%)
Race			
White	2,407,816 (76.0%)	56,737 (80.0%)	2,351,079 (76.0%)
Black	421,532 (13.0%)	6,651 (9.4%)	414,881 (13.0%)
Asian	62,123 (2.0%)	1,319 (1.9%)	60,805 (2.0%)
Hispanic	287,802 (9.1%)	5,774 (8.2%)	282,028 (9.1%)

RESULTS CON'T

Table 2: Adjusted Cox Regression Model for All Pulmonary Complications in COPD Patients With vs. Without Psoriasis

Covariate	Hazard Ratio (HR)	95% Confidence Interval (CI)	p-value
Psoriasis	1.06	(1.05, 1.08)	< 0.001

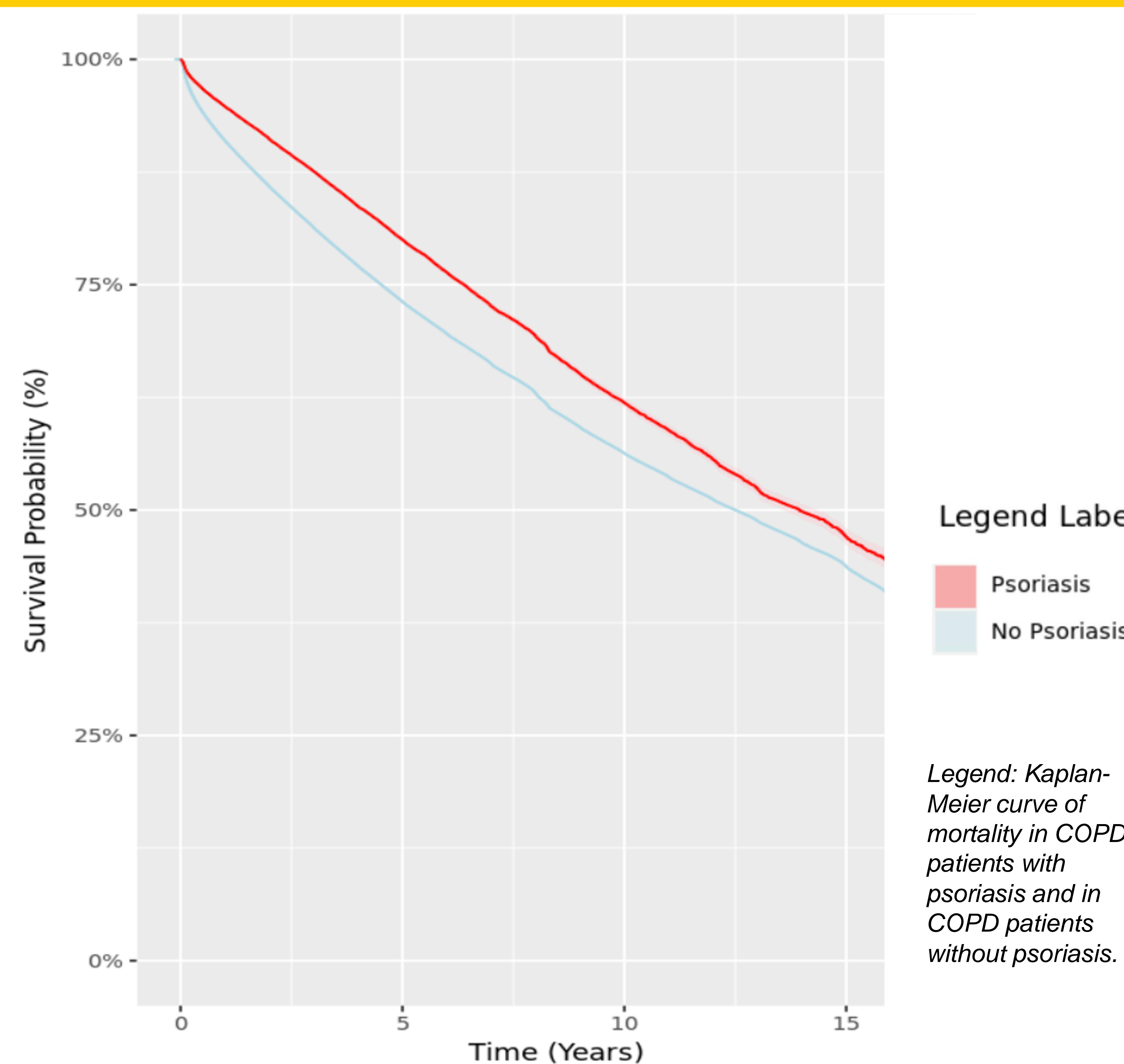
Table 3: Adjusted Cox Regression Model for Acute Pulmonary Complications in COPD Patients With vs. Without Psoriasis

Covariate	Acute Pulmonary Complication		
	Acute COPD Exacerbation		
	Hazard Ratio (HR)	95% Confidence Interval (CI)	p-value
Psoriasis	1.80	(1.77, 1.84)	< 0.001

Table 3: Adjusted Cox Regression Model for Chronic Pulmonary Complications in COPD Patients With vs. Without Psoriasis

Covariate	Chronic Pulmonary Complication					
	Pulmonary Hypertension			Respiratory Failure		
	Hazard Ratio (HR)	95% Confidence Interval (CI)	p-value	Hazard Ratio (HR)	95% Confidence Interval (CI)	p-value
Psoriasis	0.96	(0.94, 0.99)	< 0.001	0.91	(0.89, 0.93)	< 0.001

Figure 1: Kaplan-Meier Curve of Mortality in COPD Patients With vs. Without Psoriasis



RESULTS CON'T

- COPD incidence per 1000 person-years was 10.74 in psoriasis patients and 6.36 in psoriasis-free patients.
- COPD patients with psoriasis had a significantly higher risk of Any Pulmonary Complication (HR 1.06, 95% CI 1.05-1.08, p < 0.001) than those without psoriasis, adjusted for sociodemographic and clinical covariates.
- COPD patients with psoriasis had a significantly higher risk of Acute Pulmonary Complications (i.e. acute COPD exacerbation) (HR 1.80, 95% CI 1.77-1.84, p < 0.001)
- COPD patients with psoriasis had a significantly lower risk of Chronic Pulmonary complications, including pulmonary hypertension (HR 0.90, 95% CI 0.94-0.99, p < 0.001) and respiratory failure (0.91, 95% CI 0.89-0.93, p-value < 0.001) than those without psoriasis.
- COPD patients with psoriasis also had a significantly lower risk of all-cause mortality (HR 0.87, 95% CI 0.86-0.89, p < 0.001).

CONCLUSIONS

- Our findings suggest that psoriasis has a differential effect on pulmonary outcomes in COPD patients depending on the acuity of the complication.
- In terms of Acute Pulmonary Complications, psoriasis increases risk of acute COPD exacerbations.
- In terms of Chronic Pulmonary Complications, psoriasis increases risk of pulmonary hypertension, respiratory failure, and mortality.
- Possible explanations for the findings in the acute setting includes shared pro-inflammatory signaling pathways between psoriasis and COPD, specifically TNF α signaling.
- In contrast, the protective effect of psoriasis in the chronic setting may be due to differences in healthcare utilization.
- Future work should further elucidate the driving factors behind the differential effect of psoriasis in COPD complications.

DISCLOSURES & REFERENCES

Please scan the QR code to view disclosures and references.

