

BACKGROUND¹⁻⁶

- Immune checkpoint inhibitors (ICIs) have significantly improved outcomes in NSCLC patients.
- Despite their benefits, ICIs are associated with immune-related adverse events, including pneumonitis, which can lead to treatment interruption and morbidity.
- Pneumonitis is a relatively uncommon but clinically important toxicity, particularly in patients with underlying lung conditions.
- Chronic Obstructive Pulmonary Disease (COPD) is common among NSCLC patients and may increase susceptibility to pulmonary complications.
- However, real-world evidence evaluating the risk of pneumonitis among ICI-treated patients with pre-existing COPD remains limited.

OBJECTIVE

To evaluate the incidence and time to pneumonitis among NSCLC patients initiating ICIs, stratified by pre-existing COPD.

METHODS



Study Design & Data Source

Retrospective Cohort Study using MarketScan claims data (2022)



Study Population

- Adults with NSCLC initiating ICIs
- Continuous enrollment prior to index date
- Excluded patients with baseline pneumonitis



Exposure

Pre-existing COPD (yes vs no)



Outcome

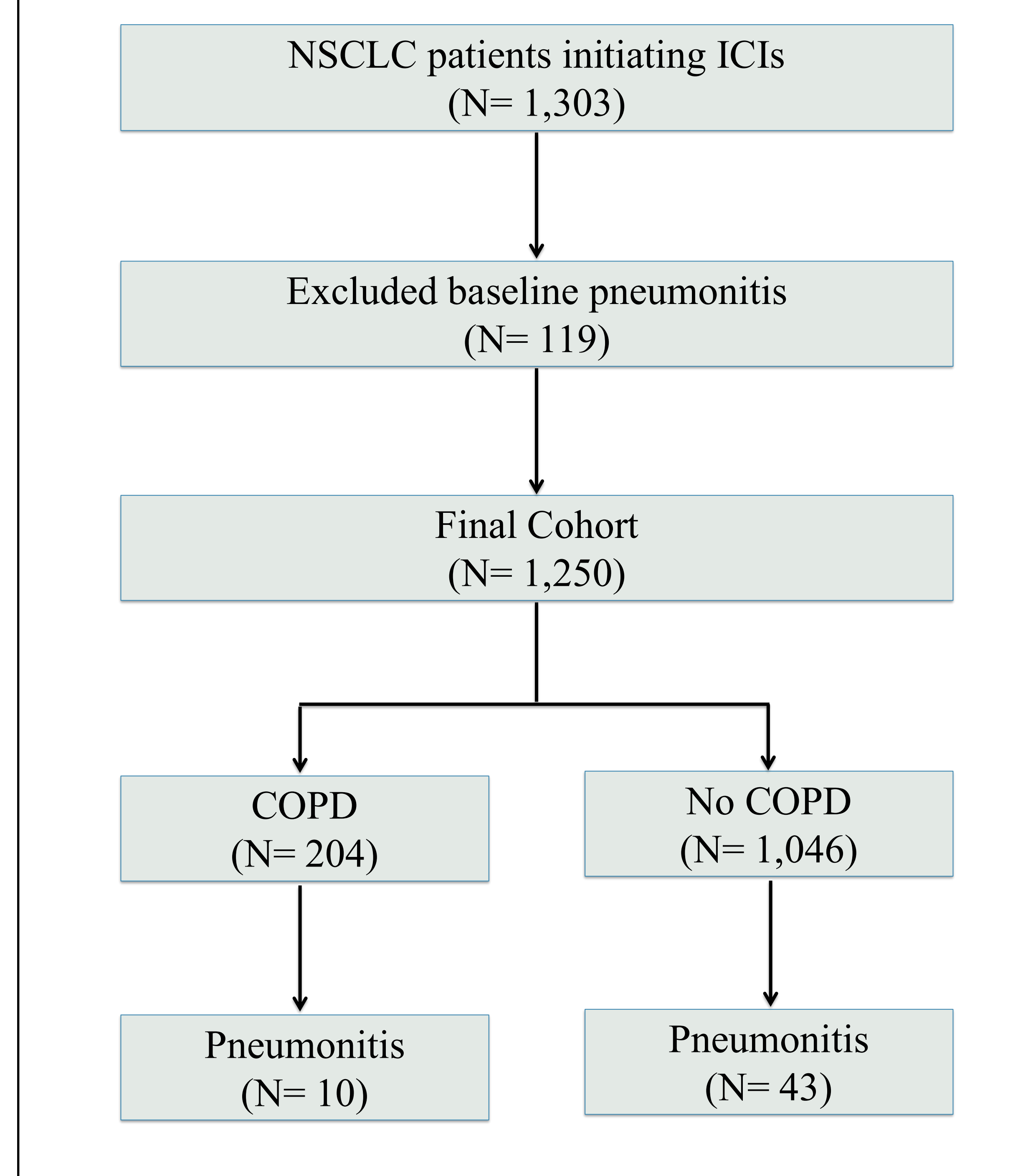
Incident pneumonitis within 180 days of ICI initiation



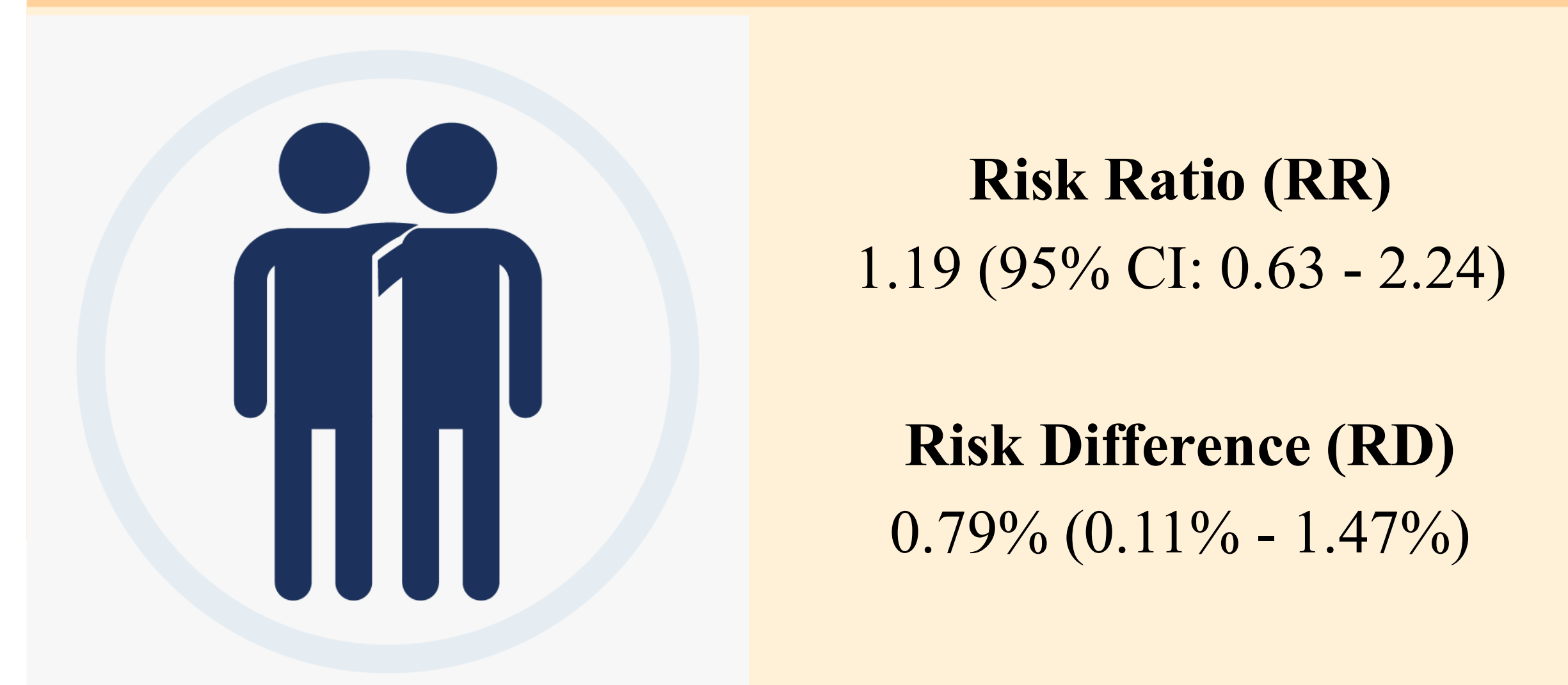
Analysis

- Incidence proportion (%)
- Risk ratio (RR) and Risk Difference (RD)
- Kaplan-Meier analysis for time to pneumonitis

STUDY PLAN



RISK COMPARISON (180 DAYS)



RESULTS

Table 2. Incidence of Pneumonitis within 180 days of ICI

Cohort	N	Events	Incidence (%)
Overall	1250	53	4.24
No COPD	1046	43	4.11
COPD	204	10	4.90

Table 1. Baseline Characteristics of NSCLC patients initiating ICIs by COPD status

Characteristic	COPD (N = 204), n(%)	No COPD (N=1046), n(%)	P-value
Age, mean (SD)	59.2 (5.0)	57.7 (6.6)	0.002
Age Group			0.055
18-45	5 (2.45)	63 (6.02)	
46-54	25 (12.25)	184 (17.59)	
55-64	168 (82.35)	771 (73.71)	
>=65	5 (2.45)	26 (2.49)	
Sex			0.40
Female	98 (48.04)	548 (52.39)	
Male	105 (51.47)	496 (47.42)	
Smoking Proxy			<0.0001
No	37 (18.14)	602 (57.55)	
Yes	167 (81.86)	444 (42.45)	
ICI class			0.0004
Other ICI regimens	0 (0.00)	3 (0.29)	
PD-1	137 (67.16)	830 (79.35)	
PD-L1	67 (32.84)	213 (20.36)	
Modified Comorbidity Index			<0.0001
0	84 (41.18)	657 (62.81)	
1-2	104 (50.98)	354 (33.84)	
3+	16 (7.84)	35 (3.35)	

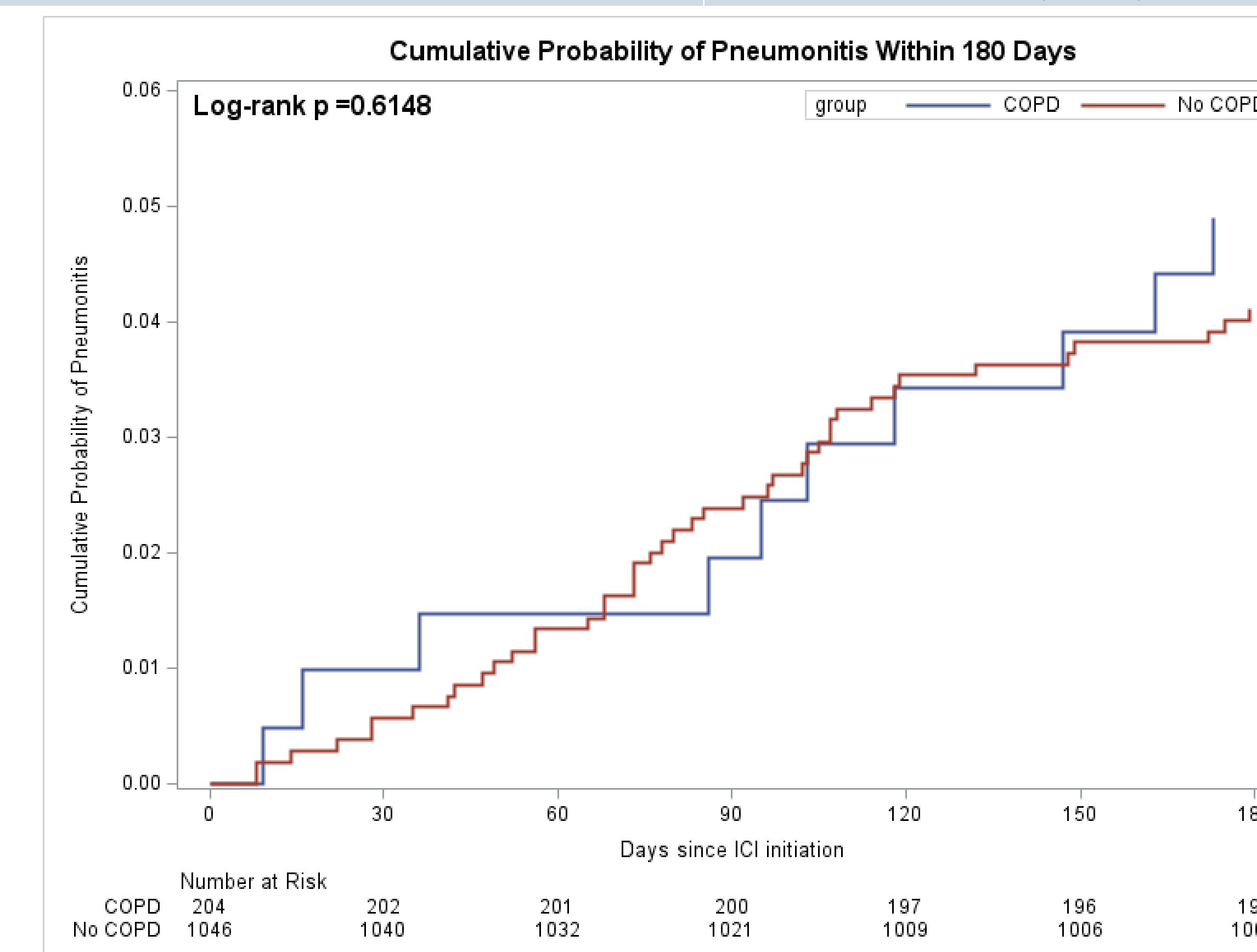


Figure 1. Cumulative Probability of Pneumonitis within 180 days

LIMITATIONS

- Claims-based outcome identification (misclassification possible)
- Limited clinical detail (e.g., COPD severity)
- Small number of pneumonitis events
- Lack of competing risk adjustment

- Among 1,250 NSCLC patients initiating ICIs, 16.3% had pre-existing COPD.
- The 180-day incidence of pneumonitis was 4.24% overall, with a slightly higher incidence observed among COPD patients compared to those without COPD (4.90% vs 4.11%).
- The crude risk ratio was 1.19, corresponding to an absolute risk difference of 0.79%.
- Kaplan-Meier curves showed similar cumulative probability over time, with modest separation toward the end of follow-up.

CONCLUSION

In this real-world analysis of NSCLC patients receiving ICIs, pneumonitis incidence was low and only modestly higher among patients with pre-existing COPD. These findings suggest that while COPD may be associated with increased pneumonitis risk, the absolute difference is small.

REFERENCES

