

Lung cancer patient treatment with immune checkpoint inhibitors: multicenter, NLP-guided data extraction from EHRs

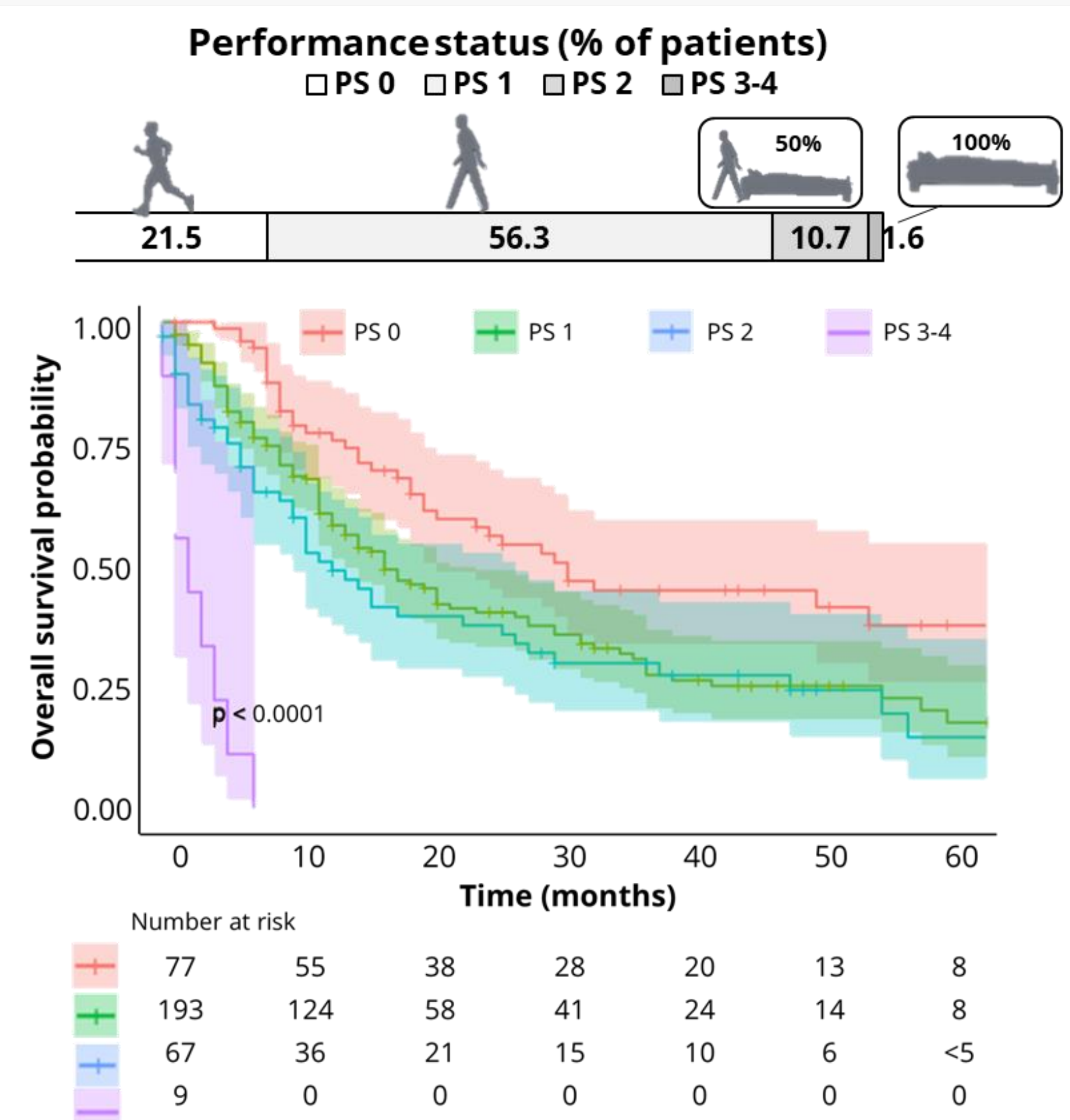
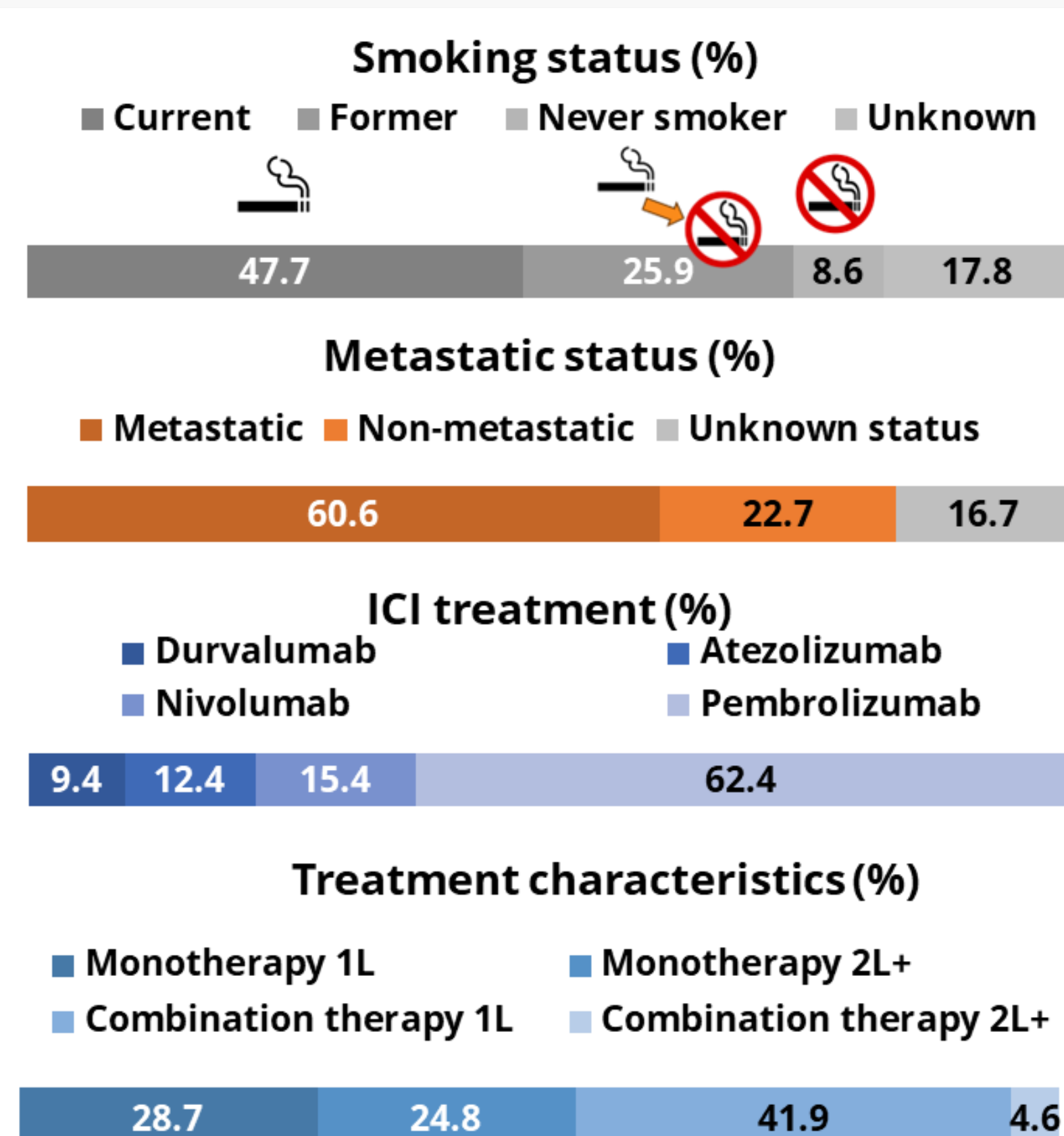
Analysis of Lung Cancer Patient Treatment with Immune Checkpoint Inhibitors Using Natural Language Processing for Data Extraction from Electronic Health Records

Background: Immune checkpoint inhibitors (ICIs) revolutionized the treatment landscape for lung cancer, displaying significant survival benefits in numerous clinical trials. However, understanding real-world treatment patterns and outcomes of lung cancer patients receiving ICIs remains crucial for optimizing patient care. To address this gap, we conducted a multicenter study to gain novel insights into the utilization of ICIs in lung cancer patients.

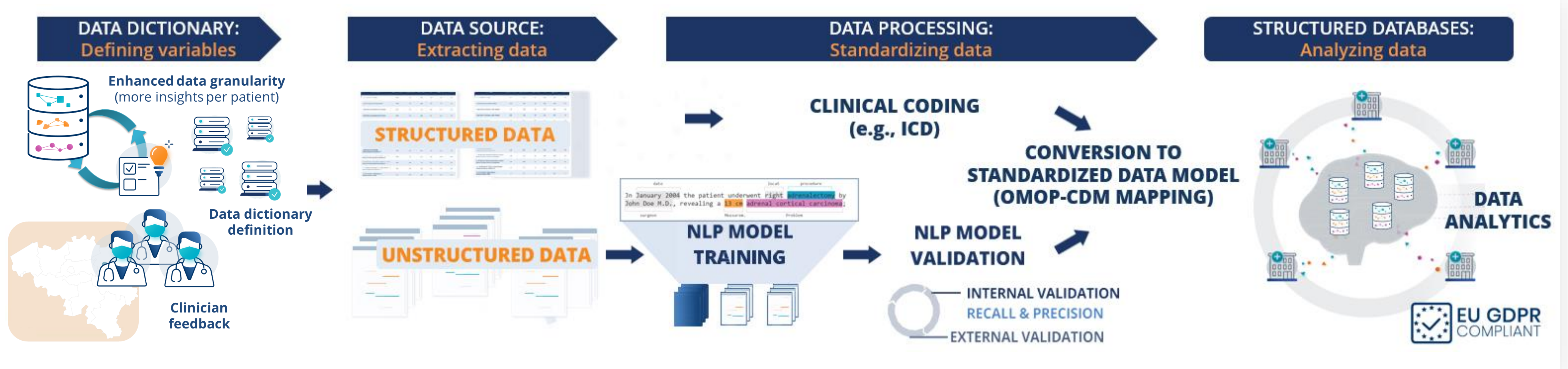
Result 1: In a cohort of 730 lung cancer patients, the median age was 67 years and 67% were males. Most patients were current smokers, had metastatic disease, and were treated with pembrolizumab. Most treatments were given as combination in 1L.

Result 2: Most patients had a performance status (PS) = 1. A higher PS was associated with a decreased overall survival probability.

Hospitals	3
Data sources	10
Lung cancer patients	730
Median age	67
Sex (male)	67%
ICI administrations	8145
Median OS	22 months



Methods



Conclusion: Autonomously extracting data from Oncology EHRs and validating OMOP-CDM hospital databases is feasible, enabling access to real-world data on lung cancer patients receiving ICI therapy. This approach provides insights into demographics, disease characteristics, and overall survival. Future analyses will shed light on immune-related adverse events, comorbidities, tumor stage, pathology, and treatment lines.



lege Bassez¹, Laura Deckx¹, Vincent Geldhof², Annelies Verbiest³, Danielle Delombaerde⁴, Shahbaz Pervaiz¹, Dries Hens¹, Philip Debruyne⁵, Christof Vulsteke⁴, Clara L. Oeste¹

¹LynxCare Inc., Leuven, Belgium. ²Department of Oncology, General Hospital AZ Kliina and General Hospital AZ Voorkepen, Antwerp, Belgium. ³Department of Oncology, Antwerp University Hospital, Antwerp, Belgium. ⁴Department of Oncology, General Hospital AZ Maria Middelaes, Ghent, Belgium and Center for Oncological Research (CORE), University of Antwerp. ⁵Department of Medical Oncology, General Hospital AZ Groeninge, Kortrijk, Belgium.

