

# The Impact of Age and Comorbidity on Effect of Treatment, Adverse Effects and QoL in Danish Lung Cancer Patients Receiving Immunotherapy.

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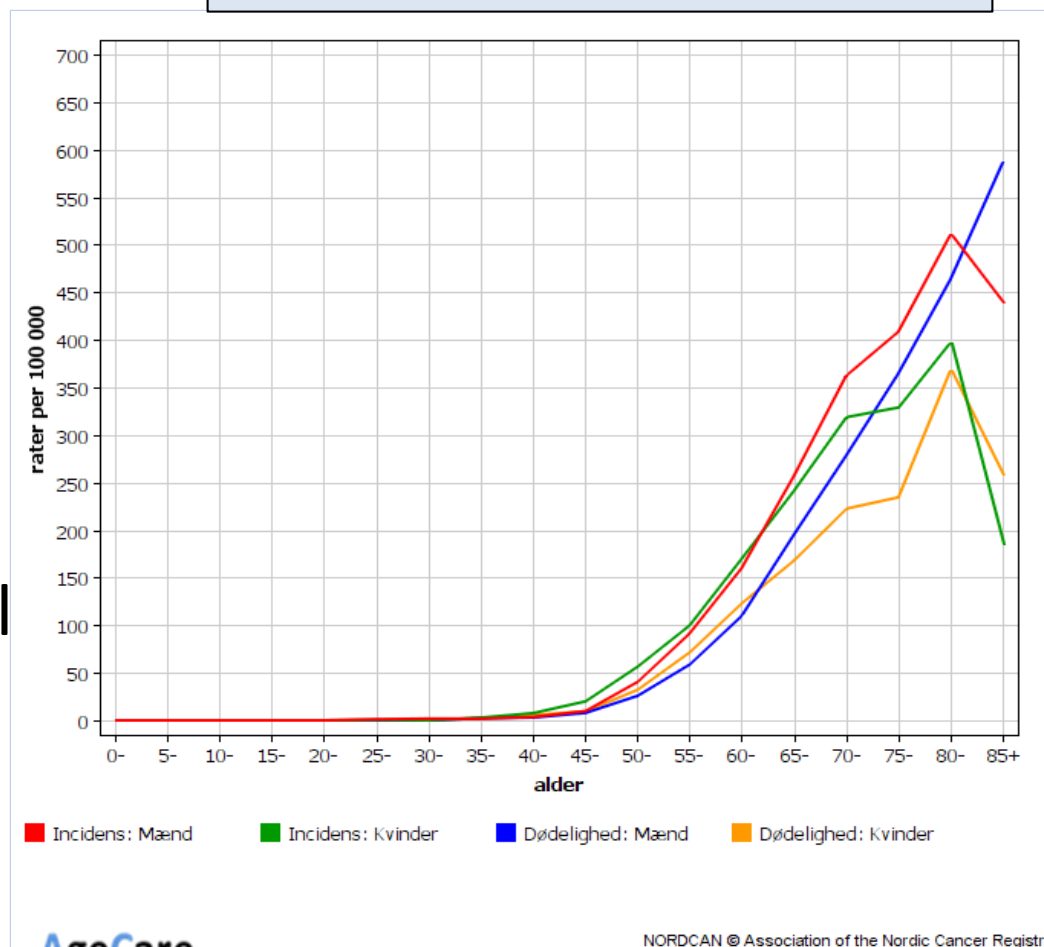
# Lung Cancer (NSCLC)

- Medium age at diagnosis = 70 years.

## Up until 2015:

- Stage IV NSCLC
- No long-term survival

Danish Lung Cancer patients 2015



# Immunotherapy for NSCLC

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

## Nivolumab versus Docetaxel in Advanced Squamous-Cell Non–Small-Cell Lung Cancer

Julie Brahmer, M.D., Karen L. Reckamp, M.D., Paul Baas, M.D.,  
Lucio Crinò, M.D., Wilfried E.E. Eberhardt, M.D., Elena Poddubskaya, M.D.,  
Scott Antonia, M.D., Dh.D., Adam Duzanski, M.D., Dh.D., Everett F. Vokes, M.D.  
n engl j med 373;2 nejm.org July 9, 2015

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## Pembrolizumab versus Chemotherapy for PD-L1–Positive Non–Small-Cell Lung Cancer

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for the KEYNOTE-024 Investigators\*

- Checkpoint- or PD-1/PD-L1 inhibition.
- 2015: For selected patients based on Phase III Studies.

# 'Real Life' patients and Aims

## Challenges



Age  
Comorbidity  
Performance Status (PS)  
Brain Metastasis (BM)

Lack of biomarkers and QoL data

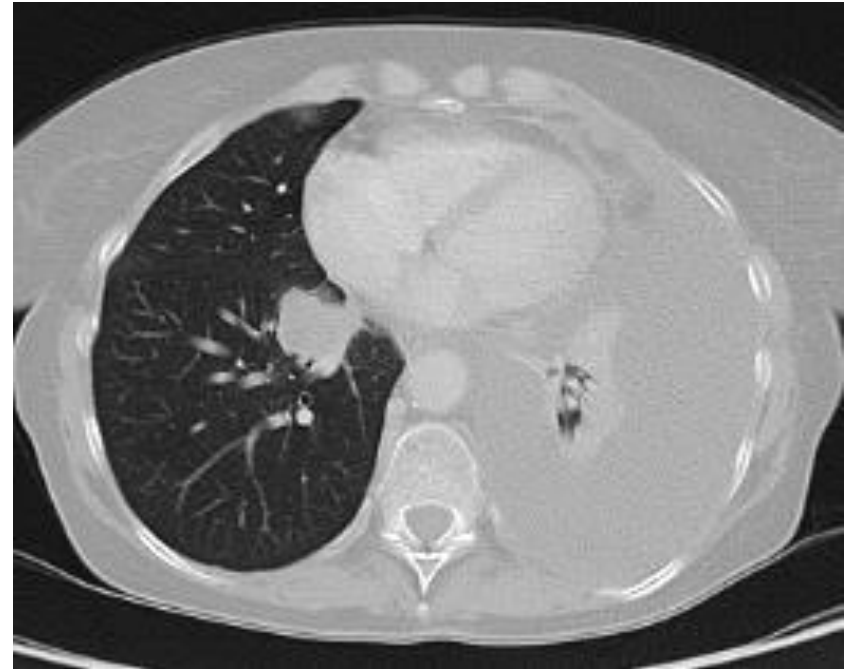
## Aims

of PhD Project



- To characterize 'Real-Life' NSCLC patients treated with PD-1/PD-L1 inhibitors at our Department of Oncology, Odense University Hospital.
- To investigate subgroups of 'Responders' versus 'Non-responders' including those with BM at baseline.

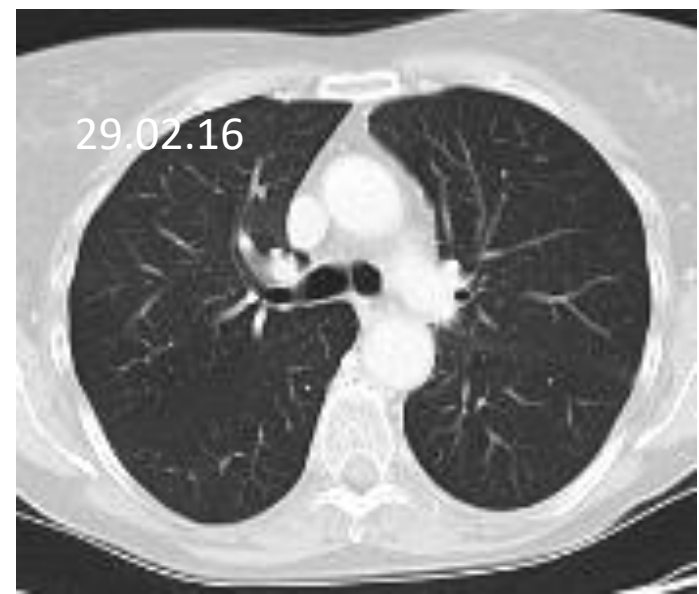
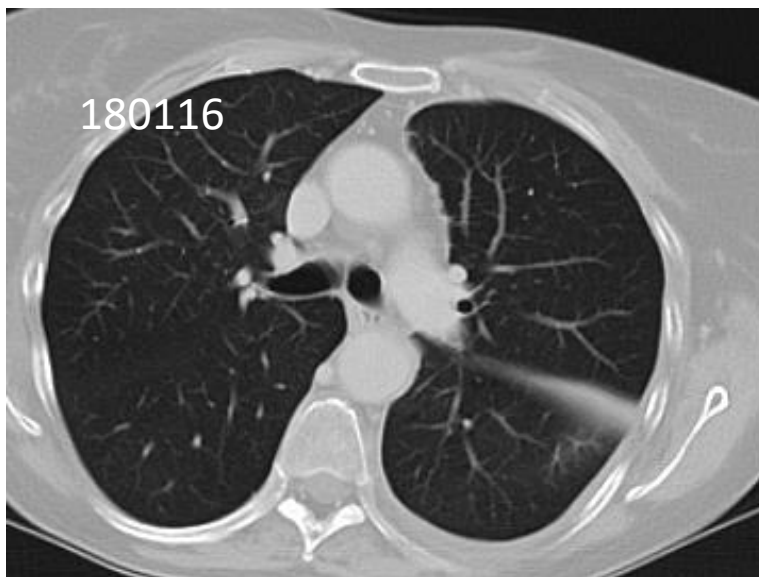
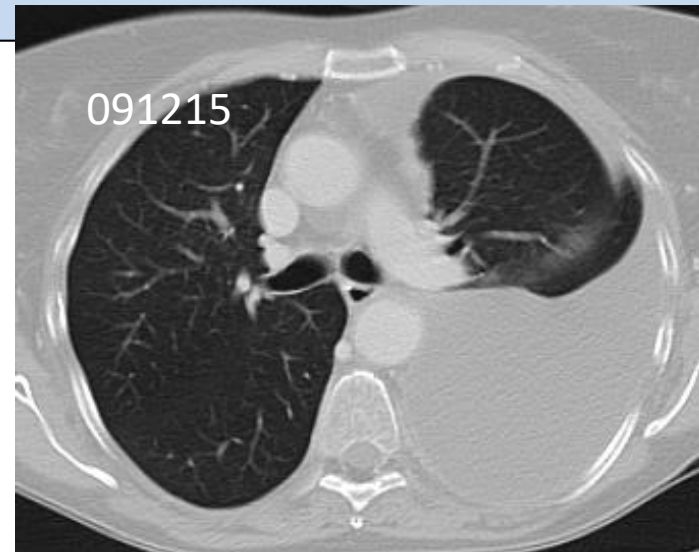
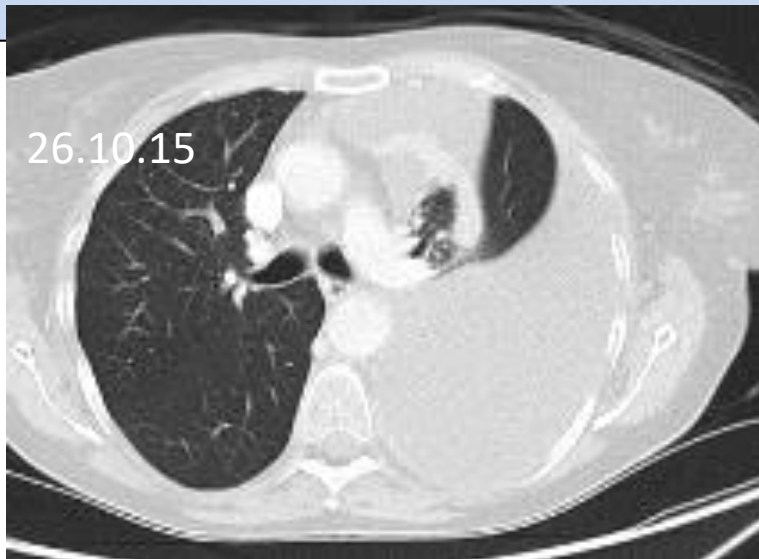
# PD-1 inhibition. Response evaluation?



- Radiologic tumor regression but.....
- PD of pleural effusion and...
- Clinical Benefit.



# Continued PD-1 inhibition



# Patients and Methods

- All NSCLC (incurable IIIA-IVB) patients treated with PD-1/PD-L1 inhibitors from January 2015-April 2018 (n=118). Stratified into groups:

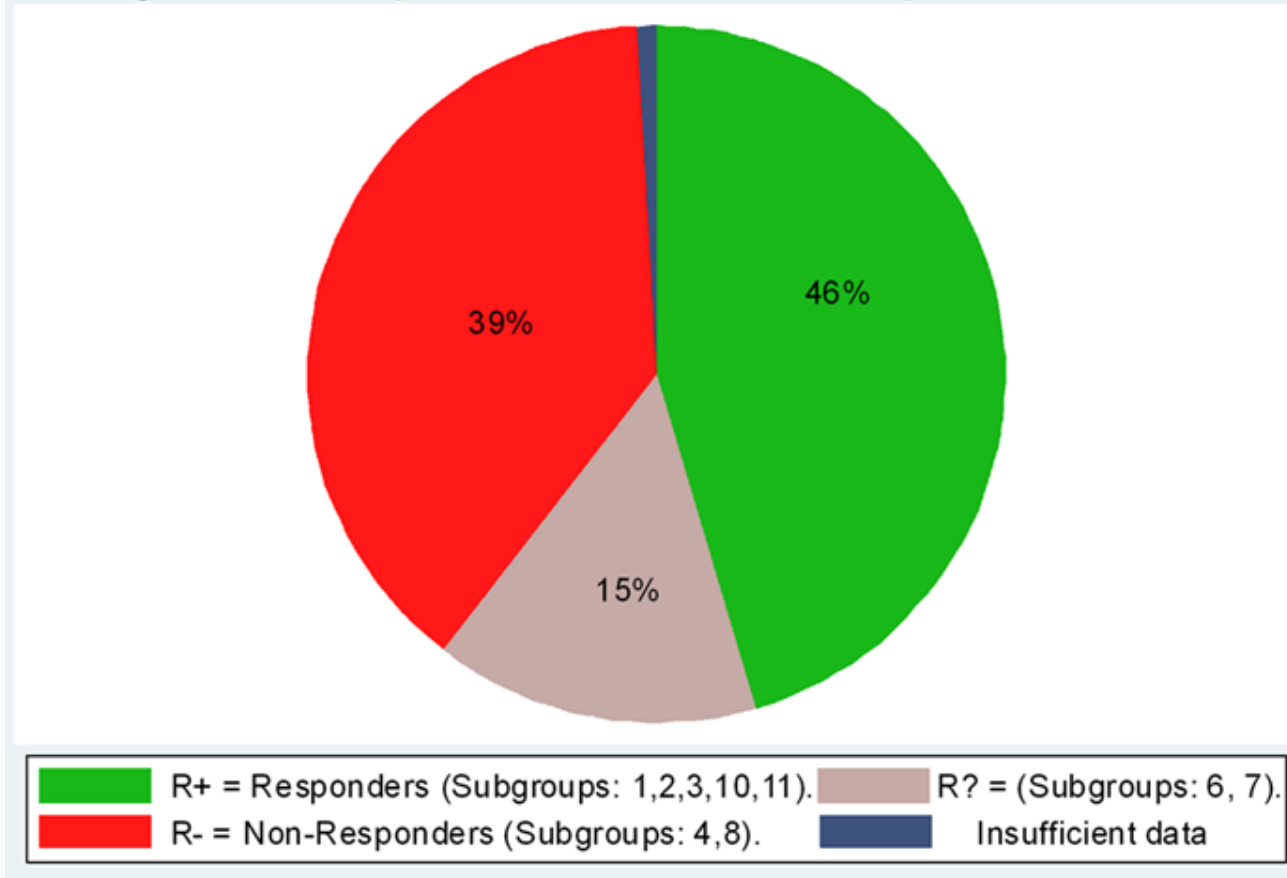
R+: Radiologic Responders with Clinical Benefit or No-Change Clinical (n=54).

R-: Radiologic Non-responders independent of clinical response (n=46).

R?: An intermediate 'discrepancy' group with Radiologic Response but Clinical Deterioration (n=18).

# Preliminary Results

Figure 1b. Responders versus Non-Responders. n=118





# Preliminary results/conclusion

## **NSCLC in general (n=118):**

- Patients with PS=2 (n=10) seem to respond to treatment as well.
- No patients with PS=3 (n=2) responded to treatment.
- There might be more discrepancy between clinical benefit and radiologic response with higher age and higher comorbidity.
- More prospective studies are needed and subgroup analysis.

# Preliminary results

Subgroup with Brain Metastasis at baseline n=22		R+ n= 10 (45%)	R- n= 11 (55%)	R? n= 1 (5%)
<b>Time on treatment</b>	187	358	37	126
Days, mean, range	[0-700]	[51-700]	[0-105]	[126]
<b>Status, n (%):</b>				
- Ongoing	5 (23%)	5 (50%)	0 (0%)	0 (0%)
- Follow-up	3 (14%)	3 (30%)	0 (0%)	0 (0%)

- They respond to checkpoint-inhibitors (comparative mean treatment time of 187 days/164 days).
- ‘Responders’ seem to benefit from treatment (mean ToT > 300 days/37 days , and 30%/0% are in FU).

# Perspectives



## Part 1: Retrospective data analysis

- More data analysis on OS, PFS and toxicity in all patients (n=118) and those with BM (n=22).



## Part 2: Biomarker, toxicity, comorbidity.

- A prospective study was initiated in May 2018 (20/150 patients have been included so far).
- Blood samples consecutively for biobank, MRI and expanded CT scans are performed (for BM and comorbidity).



## Part 3: Quality of Life

- EORTC-QoL30 og Euro-5Q-5D-5L. Consecutively.
- Clinical benefit is relevant also for patients not fulfilling criteria for an objective treatment response.