The clinical potential of artificial intelligence

in early detection of lung cancer

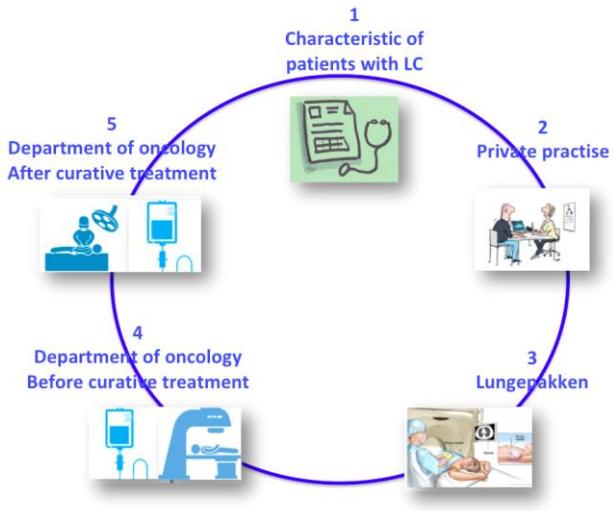
Resumé - engelsk

This project aims to investigate, how artificial intelligence can be applied in clinical settings, and based on risk-estimates, used to predict patients in high risk of lung cancer, patients in high risk of experiencing relapse of lung cancer after treatment, in order to offer qualified personalized treatment.

Data on patients who have undergone diagnostics due to a suspicion of lung cancer from the Region of Southern Denmark, within the last 10 years will be included. Risk estimates will be calculated, using mathematical algorithms, in order to predict certain outcome.

The project is divided into five sub studies, representing the patients ”journey” throughout the different sectors, from private practise, examination in medical diagnostic centres, to oncological treatment at the Department of Oncology.
Project 1: A descriptive analysis of characteristics among patients with lung cancer, compared with a sample without malignancy, who have undergone diagnostics due to a suspicion of cancer.
Project 2: A characterization of patients with vague unspecific symptoms of cancer, in order to create risk estimators that can help the private practitioner refer patients to further diagnostics at en earlier stage.
Project 3: A characterization of patients with a benign diagnosis, in order to avoid overtreatment and excess diagnostics.
Project 4: A characterization of patients undergoing potentially curative chemo-radiation therapy, who experience relapse of disease, in order to create risk estimators and personalize treatment, accordingly.
Project 5: A characterization of patients undergoing surgery and subsequently chemotherapy, in order to prevent relapse. The aim is again to create individual risk estimators in order to create individual treatment strategies.

The results will be validated on a share of the patient population, and subsequently tested prospectively. With this project we aim to create risk estimators supporting the clinician both in early detection of lung cancer, as well as in generating treatment plans based on individual health information.



Substudies 1-5: Illustration of the patients "journey" throughout the different sectors, handling dignosis and treatment of lung cancer.