Electromagnetic Navigation Bronchoscopy versus Combined Electromagnetic Navigation Bronchoscopy and Radial Endobronchial Ultrasound for Diagnosis of Peripheral Lung Lesions – A Randomized Clinical Trial (NEBULA)

Despite recent years improvement, lung cancer remains the leading cause of cancer deaths in Denmark. This is partly due to many patients being diagnosed in an advanced stage limiting the possibilities of curative treatment. Much attention has therefore been aimed at identifying tools for early identification of patients with possible lung cancer. Screening or easy access to low dose CT of the chest may help to identify patients with possible early stage lung cancer. These patients however remain a diagnostic challenge, since the ideal tool for performing biopsies of small lung lesions is yet to be developed. If patients are to benefit of an improved identification of possible early stage lung cancer, there is an urgent need to also further improve the methods for obtaining biopsies in this patient population. Current methods for performing biopsies of small lung lesions are either transthoracic, bronchoscopy, or surgery. When compared to surgery, the bronchoscopy methods have the advantages of being easily accessible, cheap, safe with a very low risk of complications, and have limited patient discomfort following the procedure. The major drawback is the diagnostic yield still being significantly lower than surgery.

In recent years, two methods have been developed which seem to improve the diagnostic yield of bronchoscopy for diagnosing peripheral lung lesions. The rationale behind both techniques is to improve identification of the lung lesions prior to performing the biopsies and thereby improving the chance of obtaining a representative tissue sample. One method involves the use of an ultrasound probe (radial endobronchial ultrasound (rEBUS)) to more accurately identify the lung lesion, and the other involves the use of electromagnetic navigation to guide the operator to the lung lesion (electromagnetic navigation bronchoscopy (ENB)). One small study indicates that the diagnostic yield can be further improved by combining both rEBUS and ENB in the same procedure. The drawbacks of a combination are however increased costs and procedure time thus limiting the number of procedures, which can be performed within a given time frame. The study aims to determine whether a combination of rEBUS and ENB is superior to ENB alone in patients with suspected lung cancer due to a peripheral lung lesion.