Role of High Definition Bronchoscopy And I- Scan Technology Compared To Standard White Light Bronchoscopy In Patients With Suspected Lung Cancer

Thesis

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Contents

List of Abbreviations

AAH	**:**	Atypical adenomatous hyperplasia
AC	**:**	Atypical carcinoid
ACCP	**:**	American colleague of chest physician
AF	**:**	Autofluorescence
AFB	**:**	Autofluorescence bronchoscopy
AIS	**:**	Adenocarcinoma in situ
ASD	**:**	Angiogenic squamous dysplasia
ATS	**:**	American Thoracic Society
BAC	**:**	Bronchioloalveolar carcinoma
CCD	**:**	Charged couple device
CE	**:**	Contrast enhancement
CIS	**:**	Carcinoma in situ
CLE	**:**	Confocal laser endomicroscopy
COPD	**:**	Chronic obstructive lung disease
CP-EBUS	**:**	Convex probe endobronchial ultrasound
CSV	**:**	Closed Suction Valve
CT	**:**	Computed tomography
DICOM	**:**	digital imaging and communications in medicine
DIPNECH	**:**	Diffuse idiopathic pulmonary neuroendocrine cell hyperplasia
EBUS	**:**	Endobronchial ultrasound

eCLE	**:**	Endoscopic Confocal laser endomicroscopy
EGFR	**:**	Epithelial derived growth factor
ENB	**:**	Electromagnetic Navigation Bronchoscopy
ERS	**:**	European Respiratory Society
EWC	**:**	Extended working channel
FD-OCT	**:**	Fourier domain Optical Coherence Tomography
HD	**:**	High definition
HDWLE	**:**	high-definition white light endoscopy
HMB	**:**	High Magnification Bronchovideoscopy
IASLC	**:**	International Association for the Study of Lung Cancer
LDCT	**:**	Low dose computed Tomography
LIFE	**:**	Light imaging fluorescence endoscope
LPA	**:**	Lepidic predominant adenocarcinoma
MIA	**:**	Minimally invasive adenocarcinoma
mSv	**:**	Millisievert
NBI	**:**	Narrow Band Imaging
NCI	**:**	National cancer institute
OCT	**:**	Optical Coherence Tomography
pCLE	**:**	Probe-based Confocal laser endomicroscopy
PCR	**:**	Polymerase chain reaction
PDT	**:**	Photodynamic therapy

PIU	**:**	Probe interface unit
RAR	**:**	Retinoic acid receptor
RCH	**:**	Reserve cell hyperplasia
RGB	**:**	Red Green Blue
ROSE	**:**	Rapid on-site evaluation
RP-EBUS	**:**	Radial probe endobronchial ultrasound
SAFE	**:**	System of autofluorescence endoscopy
SCC	**:**	Squamous cell carcinoma
SE	**:**	Surface enhancement
TC	**:**	Typical carcinoid
TD-OCT	**:**	Time-domain Optical Coherence Tomography
TE	**:**	Tone enhancement
VATS	**:**	Video assisted thoracoscopy
WLB	**:**	White Light Bronchoscopy

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Introduction

Lung cancer is the leading cause of cancer mortality worldwide. Despite evolving knowledge of lung cancer, molecular genetics, and improved technology for the detection of lung cancer, the overall survival for lung cancer is still quite poor (5 year survival 17%) ***(Siegel et al., 2012).***

Worldwide, lung cancer is the most common cancer among men in terms of both incidence and mortality, and among women has the third highest incidence, and is second after breast cancer in mortality **(*World Cancer Report, 2014).***

Unfortunately, the majority of patients with recently diagnosed lung cancer are not operable. Patients presenting with inoperable non-small cell carcinoma of the lung associated with severe bronchial obstruction are at a high risk for developing post-obstructive pneumonia, respiratory failure or both. This often leads to death in weeks to months ***(Celikoglu et al., 2008).***

Early detection and surgical resection is essential for the treatment of lung cancer. Although the introduction of