



Evaluation of the Role of Bronchoscopy in the Intensive Care Units

Thesis

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قالوا

لَسْبَحَانَكَ لَا عِلْمَ لَنَا
إِلَّا مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ
الْعَلِيمُ الْعَظِيمُ

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List of Abbreviations

A.B.G	:	Arterial blood gas
ABC	:	Airway, breathing, circulation
AFB	:	Acid Fast Bacilli
AIDS	:	Acute Immune Deficiency syndrome
APC	:	Argon plasma coagulation
ARDS	:	Adult Respiratory Distress Syndrome
ARF	:	Acute respiratory failure
ASUSH	:	Ain Shams University Specialized Hospital
BAL	:	Broncho alveolar lavage
BB	:	Endobronchial biopsy
BMS	:	Bare-metal stent
BUN	:	Blood Urea Nitrogen
CAP	:	Community Acquired Pneumonia
CBC	:	Complete Blood Count
CHD	:	congenital heart diseases
CMV	:	Cytomegalovirus
CO ₂	:	Carbon dioxide
COPD	:	Chronic Obstructive Pulmonary Disease
Co-V	:	Corona viruse
CPIS	:	Clinical pulmonary infection score
Cr	:	Creatinine
CT	:	Computed Tomography
DDAVP	:	D-arginine vasopressin
DEAFF	:	Detection of early antigen fluorescent foci
DES	:	Drug-eluted stent
DHE	:	Dihematoporphyrin ether / ester
DM	:	Diabetes Mellitus
EBES	:	Endobronchial electro surgery
EBET	:	Endobronchial electrotherapy
EBUS	:	Endobronchial ultrasound
ECG	:	Electro Cardio Graph

List of Abbreviations

ESR		Erythrocyte sedimentation rate
ETAs	:	Endotracheal aspirates
ETT	:	Endotracheal Tube
FB	:	Flexible Bronchoscopy
FBs	:	Foreign bodies
FEV1	:	Forced expiratory volume in one second
FFB		Flexible fibreoptic bronchoscopy
FiO ₂	:	The inspired oxygen concentration
FOB	:	Fibrotic Bronchoscopy
GIT	:	Gastrointestinal tract
HB		Haemoglobin
HCAP	:	Health care associated pneumonia
HDR	:	High dose rate
HPDs	:	Hemato porphyrin derivatives
HTN	:	Hypertension
ICP	:	Increase intracranial pressure
ICU	:	Intensive Care Unit
ILD	:	Interstitial Lung Disease
INR	:	International Normalization Ratio
LMA	:	laryngeal mask airway
LMWH	:	Low molecular weight heparin
LPR	:	Laser photoresection
Nd :YAG	:	Neodymium-doped yttrium aluminum garnet
NOACs	:	New Oral Anticoagulants
PA	:	Poster anterior
PaCO ₂	:	Pressure of arterial carbon dioxide
PaO ₂	:	Arterial pressure of oxygen
PBT	:	Pre bronchoscope tests
PCR	:	Polymerase Chain Reaction
PDT	:	Photodynamic therapy
PEEP	:	Positive End Expiratory Pressure
PEEP i	:	Intrinsic PEEP
PetCO ₂	:	End-tidal PCO ₂
PET-CT	:	Positron Emission Tomography-Computed

List of Abbreviations

PITTS	:	Post tracheostomy tracheal stenosis
PLT		Platelets
PTT		Prothrombin Time
RB		Rigid bronchoscope
RICU	:	Respiratory Intensive Care Unit
SAT	:	Saturation of oxygen
SaO ₂		Oxygen saturation
SpO ₂	:	Saturation of Oxygen
SVCO	:	superior vena cava obstruction
TB	:	Tuberculosis
TBBx		Transbronchial biopsy
TBLB	:	Trans bronchial lung biopsy
TBNA	:	Trans bronchial needle aspiration
UAO	:	upper airway obstruction
UFH	:	Unfractionated heparin
VAP	:	Ventilator associated pneumonia
WBCs	:	Wight blood cells

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Abstract

Introduction: Critically ill patients represent a high risk group for most invasive procedures. Bronchoscopy is a fundamental technique used in the study of respiratory diseases. It is increasingly being used in intensive care units (ICU) because it is easy to perform at the bedside, with few complications described with its use.

Aim: The aim of this study was to evaluate the role of bronchoscopy in the intensive care units (indications, advantages, disadvantages, results and complications).

Patients and methods: Bronchoscopy (rigid or fibroptic) was performed in Ain shams University hospital and Ain Shams University Specialized Hospitals on 80 ICU patients for diagnostic and/ or therapeutic indication. The patients were grouped into ventilated and non-ventilated.

Results: Fifty (62%) FOBs and 30 rigid bronchoscopies (37%) were performed on 30 ventilated patients (37.5 %) and the 50 none ventilated (62.5%). Ninety percent of flexible bronchoscopy was done for ventilated patients and 54% of rigid bronchoscopy was done in non-ventilated patients (54%). Eighty percent (80%) of the procedures were done for diagnostic purposes using FOB in 98% while 36.7% of bronchoscopies done for combined indications and 13.3% of therapeutic indications bronchoscopies were done with rigid bronchoscopy. Fifty one percent (51.25%) of the procedures that were done with bronchoscopies was lavage followed by 25% stent insertion. In 83.3% of ventilated patients lavage was done while stent insertion more at non ventilated patients group. Twenty six percent (26.25%) of patients was diagnosed malignant and 20% with infections of lower respiratory tract. Complications occurred as (21.25%) with mortality rate 0.0% and hypoxia was the most common.

Conclusion: Safety is one of the most important issues when deciding to perform bronchoscope in the ICU that depends on the accuracy of selection of the patients for the procedure and the experience of the bronchoscopist and facilities available.

Keywords: ICU, Bronchoscopy, ventilated patients, rigid bronchoscopy, flexible bronchoscopy.
