Quantitative Versus Semiquantitative and Direct Cultures of Respiratory Secretions in Diagnosis of Lower Respiratory Tract Infections

Thesis

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In **Clinical and Chemical Pathology**

By

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المزارع الكمية و الشبه كمية و المباشرة لعينات الجهاز التنفسي في تشخيص التهابات الجهاز التنفسي السفلي

رسالة
توطئة للحصول على درجة الماجستير
فى الباثولوجيا الإكلينيكية و الكيميائية

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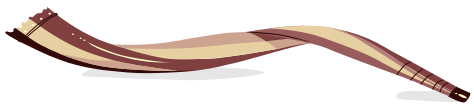

Doaa Mohamed Farouk


بسم الله الرحمن الرحيم
قَالُوا سُبْحَانَكَ
لَا عِلْمَ لَنَا
إِلَّا مَا عَلَّمْتَنَا
إِنَّكَ أَنتَ
الْعَلِيمُ الْحَكِيمُ
صدق الله العظيم
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List of Abbreviations

AIDS	*Auto Immune deficiency Syndrome*
ARDS	*Acute Respiratory Distress Syndrome*
ATS	*American Thoracic Society*
BAL	*Broncho Alveolar Lavage*
BBS	*Blinded bronchial sampling*
BCYE	*Buffered charcoal yeast extract*
BHIA	*Brain heart infusion agar*
CAP	*Community Acquired Pneumonia*
CDC	*Center for Disease Control*
CF	*complement fixation*
CFU	*Colony forming unit*
CLSI	*Clinical and Laboratory Standard Institute*
CPIS	*Clinical Pulmonary Infection Score*
CT	*Computed tomography*
DFA	*direct fluorescent antibody*
EIA	*enzyme immunoassay*
ESBL	*Endo tracheal aspirate*
ETA	*Fraction of inspired oxygen*

$Fi\,O_2$	Gomori methenamine silver
GMS	Health Care Associated Pneumonia
HCAP	hematoxylin and eosin
H&E	Intensive Care Unit
ICU	Immunodiffusion
ID	Infectious Diseases Society of America
IDSA	indirect fluorescent antibody
IFA	potassium hydroxide
KOH	latex agglutination
LA	Lower Respiratory Tract Infection
LRTI	Multi drug resistant
MDR	Methicillin Resistant Staph Aureus
MLS	Polymerase chain reaction
MRSA	Partial pressure of oxygen
PCR	Poly morpho nuclear cells
P_aO_2	Protected specimen brushing
PMN	Severe Acute Respiratory Syndrome
PSB	Squamous epithelial cells
SARS	Transcription mediated amplification.
SEC	Ventilator Associated Pneumonia
TMA	White blood cells
VAP	World Health Organization

WBC

WHO

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Introduction

Lower Respiratory Tract Infections (LRTIs) are common causes of morbidity and mortality worldwide. Community Acquired Pneumonia (CAP) and Health Care Associated Pneumonia (HCAP) represented by Ventilator Associated Pneumonia (VAP) are two important forms of pneumonia necessitating fast and conclusive management. ***(Fischbach and Walsh, 2009).***

Ventilator associated pneumonia specially refers to pneumonia developing in a mechanically ventilated patient more than 48 hours after tracheal intubation or tracheostomy ***(Rajasekhar et al., 2006).*** Reported incidence varied greatly ranging from 6 to 52% of intubated patient ***(Walkey et al., 2009***).

Community acquired pneumonia remains a major cause of morbidity and mortality in developed countries and it is a large contributor to excessive healthcare resource consumption and cost. The annual incidence rate of CAP in adults varies between 16 and 130 per 10,000 inhabitants ***(Gutierrez et al., 2006***).

Accurate identification of respiratory pathogens is the center of the management of the patients and initial appropriate treatment is associated with a lower mortality rate. Normal resident bacteria of the oropharynx may contaminate samples and a large number of different species may overgrow, preventing the determination of the true epidemiologic agent. Using a wash technique and quantitative culture of sputum has been shown to decrease the number of contaminants by 100 to 1000 fold and has enhanced the value of sputum samples ***(Ziyade and Yagci, 2010)***.