

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

Thesis

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فى الباثولوجيا الإكلينيكية و الكيميائية

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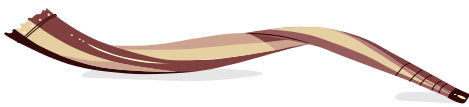
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قَالُوا سُبْحَانَكَ
لَا عِلْمَ لَنَا
بِأَمَّا عَلَّمْتَنَا
إِنَّكَ أَنْتَ
الْعَلِيمُ الْحَكِيمُ

صدق الله العظيم
سورة البقرة الآية (32)

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List of Abbreviations

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

<i>Fi O₂</i>	<i>Gomori methenamine silver</i>
<i>GMS</i>	<i>Health Care Associated Pneumonia</i>
<i>HCAP</i>	<i>hematoxylin and eosin</i>
<i>H&E</i>	<i>Intensive Care Unit</i>
<i>ICU</i>	<i>Immunodiffusion</i>
<i>ID</i>	<i>Infectious Diseases Society of America</i>
<i>IDSA</i>	<i>indirect fluorescent antibody</i>
<i>IFA</i>	<i>potassium hydroxide</i>
<i>KOH</i>	<i>latex agglutination</i>
<i>LA</i>	<i>Lower Respiratory Tract Infection</i>
<i>LRTI</i>	<i>Multi drug resistant</i>
<i>MDR</i>	<i>Methicillin Resistant Staph Aureus</i>
<i>MLS</i>	<i>Polymerase chain reaction</i>
<i>MRSA</i>	<i>Partial pressure of oxygen</i>
<i>PCR</i>	<i>Poly morpho nuclear cells</i>
<i>P_aO₂</i>	<i>Protected specimen brushing</i>
<i>PMN</i>	<i>Severe Acute Respiratory Syndrome</i>
<i>PSB</i>	<i>Squamous epithelial cells</i>
<i>SARS</i>	<i>Transcription mediated amplification.</i>
<i>SEC</i>	<i>Ventilator Associated Pneumonia</i>
<i>TMA</i>	<i>White blood cells</i>
<i>VAP</i>	<i>World Health Organization</i>

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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*).