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Management of Aspiration Pneumonia in Critically Ill Patients: Review of Modern Trends

An essay Submitted in partial fulfillment of master degree in Intensive Care Medicine

By

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2016

Acknowledgments

My deepest gratitude and thanks to Allah the most merciful for guiding me through and giving me the strength to complete this work the way it is.

I would like to express my express my deepest thanks and profound respect to my honored **PROFESSOR DR: MOSTAFA KAMEL FOUAD,** Professor of anesthesiology and intensive care and **PROFESSOR DR: ADEL MOHAMED ALANSARY** Assistant Professor of anesthesiology and intensive care for their kind encouragement, guidance, support and patience they gave me throughout the whole work. It has been an honor and privilege to work under their generous supervision.

I am greatly indebted to all member of the Anesthesia and intensive care department and to all my colleges for their continuous help and advice.

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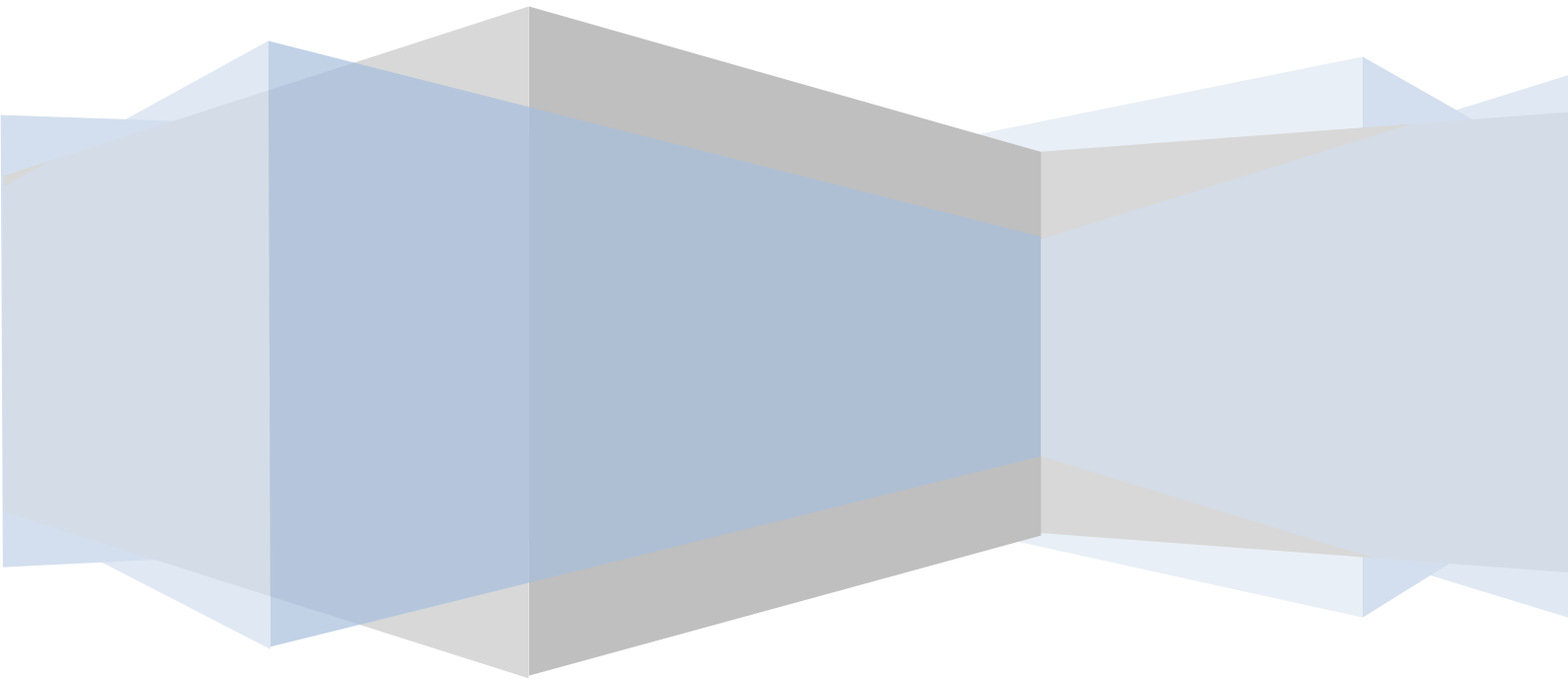
HAP	Hospital-acquired pneumonia
CAP	Community-acquired pneumonia
TNF	Tumor necrosis factor
GERD	Gastroesophageal reflux disease
BO	Bronchiolitis obliterans
ARDS	Acute respiratory distress syndrome
HCL	Hydrochloric acid
MDR	Multidrug-resistant
VAP	ventilator-associated pneumonia
ICD-9	International Classification of Diseases, Ninth Revision
GCS	Glasgow Coma Scale
IL	Interleukin
PPIs	proton-pump inhibitors
MV	mechanical ventilator
HI	Haemophilus influenza
AMS	altered mental status
ICU	Intensive care unit
ED	emergency department
LMA	laryngeal mask airway
NMB	neuromuscular blockade
MS	multiple sclerosis
COPD	chronic obstructive pulmonary disease

BAL	bronchoalveolar lavage
DM	Diabetes mellitus
ACE	Angiotensin converting enzymes
BCG	Bacillus calmette-guerin
ASA	American society of anesthesiologists
MRSA	Methicillin resistant S aureus
RCT	randomized controlled trial
PEG	percutaneous endoscopic gastrostomy

Introduction



Introduction

Aspiration is a common event that may lie within the spectrum of normal physiology. It simply refers to the drowning in or out of a substance by suction. The term is commonly used in the patient where contents of the oral or upper gastrointestinal tract have passed through the trachea and larynx and entered the lung. The term aspiration does not itself indicate the nature of the inoculum or the consequences of the event. ***(Venes et al., 2009).***

Several important clinical consequences of aspiration can occur these include chronic cough syndromes, exacerbation of asthma/ bronchospasm, bronchiolitis obliterans(BO)in lung transplant patients, and worsening of chronic fibrotic lung diseases, particularly idiopathic pulmonary fibrosis and systemic sclerosis (scleroderma), Chemicalpneumonitis, Bland aspiration, Community acquired pneumonia, Hospital acquired pneumonia, Anaerobic pleuropneumonia. ***(Gajic et al., 2011).***

There are several predisposing factors for aspiration pneumonia, Dysphagia is considered the most important risk factor for aspiration pneumonia, altered mental status (acute alcohol abuse and seizures), Esophageal motility disorders, Enteral feeding, Oropharyngeal colonization, male sex and smoking may increase risk for aspiration pneumonia. ***(Van der et al., 2011).***

Aspiration induced lung injury is a clear risk factor for development of pneumonia. Available evidence indicates that the bacteriology of aspiration pneumonia is not different from that of hospital or ventilator acquired pneumonia. The diagnosis of aspiration pneumonia rests mostly on the history of presenting illness, medical history, vital signs, and chest radiograph, In abed-bound patient, the dependent pulmonary segments are the posterior segments of the upper lobes and the superior segments of the lower lobes. In ambulatory patients, lower lobes are classically involved, especially the right ***(Marik et al., 2001).***

Introduction

The microbiology, and therefore the treatment, has seen significant changes over the last 40 to 50 years, the original teaching was that anaerobic bacteria were by far the most common pathogens in aspiration pneumonia, Even the etiology in patients with lung abscess has changed, several studies reveal much different results even for patients presenting from the community. ***(Tokuyasu et al., 2009).***

Several measures may help prevent aspiration pneumonia without introducing morbidity that include diet interventions for dysphasia, oral care, postpylorictube feedings, and the semi recumbent position for mechanically ventilated patient ***(Gomes et al., 2012).***

Following a witnessed aspiration event, the patient should be positioned so that further aspiration of gastric contents is significantly reduced. In a wake patient, this is best achieved by turning the head laterally and suctioning the oral and pharyngeal cavity. The patient's bed can also be raised by 45 degrees with the head up. The decision to intubate the patient is based on general neurological status, degree of hypoxia, and hemodynamic stability of the patient. ***(Moore et al., 2002).***

Despite major advances in understanding the pathophysiology of aspiration-induced lung injury, there remains a significant gap in diagnosing un-witnessed gastric aspiration events, as well as the ability to predict the likelihood of progression of the pulmonary insult to ALI/ARDS. One of the major problems in this regard is the absence of distinct diagnostic or prognostic signatures to diagnose this entity ***(Howrylak et al., 2009).***

Aim of the work

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The goal is to describe aspiration pneumonia regarding its diagnosis, microbiology, risk factors, prevention and treatment, with review of modern trends.

Abstract

There are several predisposing factors for aspiration pneumonia, Dysphagia is considered the most important risk factor for aspiration pneumonia, altered mental status (acute alcohol abuse and seizures), Esophageal motility disorders, Enteral feeding, Oropharyngeal colonization, male sex and smoking may increase risk for aspiration pneumonia.

Key message

Management of Aspiration Pneumonia in Critically Ill Patients.

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