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بقسم التوثيق الإلكتروني بمركز الشبكات وتكنولوجيا المعلومات دون أدنى مسئولية عن محتوى هذه الرسالة.

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Role of Chest Ultrasound in Early Diagnosis of Ventilator Acquired Pneumonia and it's impact on the outcome

Thesis

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دور الموجات فوق الصوتية علي الصدرفي التشخيص المبكر للالتهاب الرئوي المكتسب من جهاز التنفس الاصطناعي وتأثيره على النتائج

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Contents

List of Abbreviations

Abb.	:	Full term
ABG	:	Arterial blood gas
APACHE II	:	Acute Physiology And Chronic Health Evaluation II
ARDS	:	Acute respiratory distress syndrome
BA	:	Bronchial asthma
BUN	:	Blood urea nitrogen
CAP	:	Community acquired pneumonia
CDC	:	Centers for Disease Control and Prevention
CPIS	:	Clinical pulmonary infection score
Crp	:	C, reactive protien
CT	:	Computed tomography
CBC	:	Complete blood cell
COPD	:	Chronic obstructive pulmonary disease
CXR	:	Chest x-ray
DCL	:	Disturbed conscious level.
ESR	:	Erthrocyte sedmentation rate
HAP	:	Hospital-acquired pneumonia
HCAP	:	Healthcare-associated pneumonia
HIV	:	Human immunodeficiency virus.
HTN	:	Hypertension
ICU	:	Intensive care unit
ISHD	:	Ischemic heart disease
LUS	:	Lung ultrasound
MRSA	:	Methicillin-Resistant Staphylococcus aureus
MSSA	:	Methicillin-susceptible Staphylococcus aureus
MDR	:	Multidrug resistant bacteria
NAD	:	No abnormality detected
NRP	:	Non-resolving pneumonia
OHV	:	Obesity hypo-ventilation
P aeruginosa	:	*Pseudomonasaeruginosa*
PSI	:	Pneumonia Severity Index
PLAPS-point	:	Posterolateral alveolar and/or pleural syndrome
RD	:	Respiratory distress
RICU	:	Respiratory intensive care units

✐ List of Abbreviations

Abb.	:	Full term
S aureus	:	*Staphylococcus aureus*
SICU	:	Surgical Intensive Care Unit
SOFA SCORE	:	Sepsis-related organ failure assessment score
VAP	:	Ventilator-associated pneumonia

Introduction

Ventilator-related pneumonia (VAP) characterized as pneumonia that happens 48-72 hours orreafter following endotrachealtubation, portrayed by presence a new or progressivefiltrate, signs systemicfection (fever, adjusted white platelet count), changes sputum attributes, and identification a causative specialist (Torres et al., 2017).

VAP adds to around a large portion all cases emergency clinic obtained pneumonia (salluh et al., 2017).

VAP assessed to happen 9-27 % generally precisely ventilated patients, with most elevated gamble being early course hospitalization . second most normal nosocomialfectiontensive consideration unit (ICU) and most normal precisely ventilated patients (Charles et al., 2014).

At present, analysis VAP in view a mix clinical, radiological, and research center criteria.re a wide reach clinical circumstances that impersonate VAP ventilated patients so mix clinical models as Clinical pulmonaryfection score (CPIS) with lab standards as (precalcitonin, CRP) and radiological highlights further develops exactness a clinical finding.

There no radiological measures pathognomonic VAP andterpretation chest radiographs ventilated patients truly challenging. (Klompas et al., 2013)

Chest x-beam (CXR) as most straightforward symptomatic instrument recommended to bar conditions imitates VAP.

Be that as may, CXR discoveries might be negative patients assuming VAP presents at beginning phases sickness. Besides, seeing to significant expenses and need for more illumination, routine use figured tomography (CT) Scan conclusion pneumonia ICU not suggested .(Torres et al., 2017).

Ultrasound examinationcreasingly being utilized as a significant bedside technique for finding different thoracic circumstances ICUs,cluding pleural or pericardial emission, empyema, pneumothorax, aspiratory embolism, and pneumonia. Until this point in time, a couple studiesvestigated use LUS determination and follow up pneumonia crisisfice or ICU. (Upchurch et al., 2018.).

Aim of the work

The point this review to think about job chest ultrasound early determination and follow up ventilator procured pneumonia with conventional chest x-beam and connect discoveries with result.

Pneumonia

Pneumonia can be by and large characterized asflammation lung parenchyma, which solidification impacted part and an occupying alveolar air spaces with exudate,flammatory cells, and fibrin characteristic.fection by microscopic organisms or infections most normal reason, althoughhalation synthetic compounds, injury to chest divider, orfection by otherfectious specialists like rickettsia, growths, and yeasts might happen. grown-ups, microscopic organisms most normal reason pneumonia (Bouhemad et al., 2007).

Pneumonia a typical disease influencing roughly 450 million individuals every year and happening all parts world. Pneumonia happens more generally guys than females, and moreten among Blacks than Caucasians, mostly because quantitative contrasts blending Vitamin D after openness to daylight (Kabra et al., 2010).

Causative creature:

Pneumonia can be brought about by a wide assortment microorganisms, infections and parasites air we relax. Recognizing cause your pneumonia can be a significant advance seeking appropriate treatment (Ruuskanen et al., 2011).

☐ Microbes:

The most widely recognized sort bacterial pneumonia called pneumococcal pneumonia. Pneumococcal pneumonia brought about by streptococcus pneumoniae microorganism that typically lives upper respiratory plot. (David et al., 2012)

A few kinds microbes cause what known as "abnormal" pneumonia,cluding:

• Mycoplasma pneumoniae, Chlamydophila pneumoniae, Legionella pneumophila,

• These microorganisms alluded to as "abnormal" in light fact that pneumonia caused byse life forms could somewhat various manifestations, seem different on a chest X-beam, or react to unexpected anti-toxins in comparison to normal microbes that cause pneumonia. (American Lung Association, 2018).

☐ Infections:

Thefluenza infection most normal reason viral pneumonia grown-ups. Respiratory syncytial infection (RSV) most normal reason viral pneumonia little youngsters. Most popular pneumonias not genuine and last a more limited time than bacterial pneumonia. (American Lung Association 2020.)

□   Parasites:

Contagious pneumonia most average folks with persistent medicalsues or debilitated resistant frameworks, and individuals who presented to enormous dosages certain organisms from polluted soil or bird droppings (American Lung Association, 2018).

□   Parasites:

A few parasites likewise causing pneumonia eg. Toxoplasma gondii, Strongyloides stercoralis, Ascaris lumbricoides and Plasmodium malariae (Sattar and Sharma, 2019).

□   Different sorts:

Synthetic pneumonia can be brought about by goal food, fluid, gases or residue (Dunn, 2005).

Hazard factors:

□   Outrageous ages

In old populace, as a few physiologic changes more seasoned grown-ups been involved as hazard factors for pneumonia. Changes essential lung physiology subsequently agingclude diminished versatile recoil,creased air catching (feeble emphysema), diminished chest divider consistence and decreased respiratory muscle strength (Chong et al., 2008).

Babies and youngsters two years age or more youthful likewise atcreased hazard becauseir insusceptible frameworks not yet completely created (American Lung Association, 2018).

☐   Ailments that debilitate resistance:

• Constant lung sicknesses like COPD, bronchiectasis, or cystic fibrosis that make lungs more helpless (Ramirez et al., 2017).

• Other genuine persistent sicknesses, like coronary illness, diabetes and sickle cell infection (Marrie and File, 2016).

• A debilitated insusceptible framework because HIV/AIDs, an organ relocate, chemotherapy or long haul steroid use (Feldman, 2005).

• Trouble gulping, because stroke, dementia, Parkinson's illness, or other neurological circumstances, which can result yearning food, upchuck or salivato lungs thatn becomesfected.

• Late popular respiratoryfection-a comon cold, laryngitis,fluenza, and so on

• Hospitalization, particularly whentensive consideration and utilizing a ventilator to inhale (American Lung Association, 2018).

□   Wellbeing practices

• Cigarette smoking which harms lungs.

• Medication and liquor misuse, whichcrease hazard goal pneumonia (Gambassi et al., 2015).

Determination:

The finding pneumonia for most part requires show anfiltrate on chest imaging a patient with a clinically viable condition (e.g., fever, dyspnea, hack, and sputum creation) (Metlay et al., 2019).

□   Clinical show:

During history taking, patient's likely openings, goal gambles, variables, and indications ought to be audited. (Moberley, 2013)

Expected openings

A set experiences different openings, like travel, creatures, word related openings, and natural openings, can be useful deciding potential etiologies and probability bacterial pneumonia. (Moberley, 2013)

Side effects:

The clinical show bacterial pneumonia differs. Unexpected beginning side effects and fast disease