

Name of Journal: *World Journal of Radiology*

ESPS Manuscript NO: 21527

Manuscript Type: Review

Incremental value of thoracic ultrasound in intensive care unit: Indications, uses and application

Biagio Liccardo, Francesca Martone, Paolo Trambaiolo, Sergio Severino, Gian Alfonso Cibinel, Antonello D'Andrea

#### Abstract

Emergency physicians are usually called to care for unstable patients with life-threatening conditions, and to take both rapid and sharp decisions about unclear clinical pictures. The concept of using ultrasound as a real-time bedside clinical tool for the clinician, added to the irreplaceable historical and physical examination, in the emergency setting, is obtaining a growing consensus. B-mode sonography is an old technology proposed for medical applications more than 50 years ago. Its application in the diagnostic procedures of thoracic diseases has always been considered limited by the presence of air contained inside the lung, and by the presence of the bones of the thoracic cage, which prevent the progression of the ultrasound beam. However, the close relationship between air and water in the lung causes a variety of artifacts seen by ultrasound. At the bedside, thoracic ultrasound is based primarily on the analysis of these artifacts. The goals are to improve accuracy and safety in the diagnostic and therapeutic approach of variety of pulmonary pathologic diseases which are predominantly "water-rich" or "air-rich" conditions. The indications, contraindications, advantages, disadvantages, and technique of

#### Match Overview

1	CrossCheck 95 words Matamis, Dimitrios, Eleni Soilemezi, Matthew Tsagourias, Evangelia Akoumianaki, Saoussen Dimassi, Filippo B	1%
2	CrossCheck 74 words Giovanni Volpicelli. "Real-time lung ultrasound for the diagnosis of alveolar consolidation and interstitial syndr ...	1%
3	Internet 73 words crawled on 01-Nov-2013 <a href="http://www.ncbi.nlm.nih.gov">www.ncbi.nlm.nih.gov</a>	1%
4	Internet 33 words crawled on 02-Dec-2014 <a href="http://www.biomedcentral.com">www.biomedcentral.com</a>	<1%
5	Internet 32 words crawled on 10-Apr-2012 <a href="http://chestjournal.chestpubs.org">chestjournal.chestpubs.org</a>	<1%
6	Internet 25 words crawled on 16-Sep-2012 <a href="http://www.indiachest.org">www.indiachest.org</a>	<1%
7	Internet 23 words crawled on 09-Oct-2015 <a href="http://www.annalsofintensivecare.com">www.annalsofintensivecare.com</a>	<1%
8	Publications 22 words "Findings on Heart Failure Reported by Investigators at ... University of Padua (Lung Ultrasound-Implement", Obesi	<1%
9	CrossCheck 21 words Schmidt, K, M Doerr, T Brenner, S Hofer, and A Walther ... Effect of cdp-choline on microcirculatory alterations durin	<1%
10	CrossCheck 20 words Bélaïd Bouhemad. Critical Care, 2007	<1%

[全部](#)[图片](#)[新闻](#)[视频](#)[购物](#)[更多 ▾](#)[搜索工具](#)

找到约 574,000 条结果 (用时 0.65 秒)

## Google 学术: Incremental value of thoracic ultrasound in intensive care unit: Indications, uses and application

... chest radiographs in a pediatric intensive care unit - Price - 被引用次数: 49

How attractive does a new technology have to be to ... - Laupacis - 被引用次数: 1573

Catheterization of the heart in man with use of a flow- ... - Swan - 被引用次数: 2062

## Use of Contrast Echocardiography in Intensive Care and at ...

[www.ncbi.nlm.nih.gov](http://www.ncbi.nlm.nih.gov) > ... > PubMed Central (PMC) ▾ [翻译此页](#)

作者: B Cosyns - 2011 - 被引用次数: 2 - 相关文章

Bedside echocardiography in emergency room (ER) or in intensive care unit (ICU) is an ... The frequent use of mechanical ventilation, presence of chest bandages, and ... studies actually represents the main indication of ultrasound contrast agents and is ... Incremental value of cardiac imaging in patients presenting to the ...

## Point of Care Cardiac Ultrasound Applications in the ...

[www.ncbi.nlm.nih.gov](http://www.ncbi.nlm.nih.gov) > ... > PubMed Central (PMC) ▾ [翻译此页](#)

作者: RT Arntfield - 2012 - 被引用次数: 35 - 相关文章

Though the emergency department (ED) and intensive care unit (ICU) ... the indications and applications of basic echocardiographic assessment are quite similar. ... value of echocardiography to safely discharge their patients with chest pain. ... thoracic trauma represents the earliest use of limited cardiac ultrasound by ...

## Lung ultrasound in the critically ill - Annals of Intensive Care

[www.annalsofintensivecare.com/content/4/1/1](http://www.annalsofintensivecare.com/content/4/1/1) ▾ [翻译此页](#)

作者: DA Lichtenstein - 2014 - 被引用次数: 83 - 相关文章

2014年1月9日 - Lung ultrasound is a basic application of critical ultrasound, defined as a ... a use in traumatology, intensive care unit, neonates (the signs are the ... The thickness of this image is roughly 10 cm, a value incompatible with a ...

## Transthoracic US of the Chest: Clinical Uses and Applications

[pubs.rsna.org/doi/full/10.1148/radiographics.22.1.g02jae1e1](http://pubs.rsna.org/doi/full/10.1148/radiographics.22.1.g02jae1e1) ▾ [翻译此页](#)

作者: DM Koh - 2002 - 被引用次数: 124 - 相关文章



[全部](#) [图片](#) [新闻](#) [视频](#) [购物](#) [更多 ▾](#) [搜索工具](#)

找到约 574,000 条结果 (用时 0.68 秒)

## Google 学术: Incremental value of thoracic ultrasound in intensive care unit: Indications, uses and application

... chest radiographs in a pediatric intensive care unit - Price - 被引用次数: 49

How attractive does a new technology have to be to ... - Laupacis - 被引用次数: 1573

Catheterization of the heart in man with use of a flow- ... - Swan - 被引用次数: 2062

## Use of Contrast Echocardiography in Intensive Care and at ...

[www.ncbi.nlm.nih.gov](http://www.ncbi.nlm.nih.gov) > ... > PubMed Central (PMC) ▾ [翻译此页](#)

作者: B Cosyns - 2011 - 被引用次数: 2 - 相关文章

Bedside echocardiography in emergency room (ER) or in intensive care unit (ICU) is an

.... The frequent use of mechanical ventilation, presence of chest bandages, and ...

studies actually represents the main indication of ultrasound contrast agents and is ....

Incremental value of cardiac imaging in patients presenting to the ...

## Point of Care Cardiac Ultrasound Applications in the ...

[www.ncbi.nlm.nih.gov](http://www.ncbi.nlm.nih.gov) > ... > PubMed Central (PMC) ▾ [翻译此页](#)

作者: RT Arntfield - 2012 - 被引用次数: 35 - 相关文章

Though the emergency department (ED) and intensive care unit (ICU) ... the indications

and applications of basic echocardiographic assessment are quite similar. .... value of

echocardiography to safely discharge their patients with chest pain, ... thoracic trauma

represents the earliest use of limited cardiac ultrasound by ...

## Lung ultrasound in the critically ill - Annals of Intensive Care

[www.annalsofintensivecare.com/content/4/1/1](http://www.annalsofintensivecare.com/content/4/1/1) ▾ [翻译此页](#)

作者: DA Lichtenstein - 2014 - 被引用次数: 83 - 相关文章

2014年1月9日 - Lung ultrasound is a basic application of critical ultrasound, defined as a

... a use in traumatology, intensive care unit, neonates (the signs are the ... The

thickness of this image is roughly 10 cm, a value incompatible with a ...

## Transthoracic US of the Chest: Clinical Uses and Applications

[pubs.rsna.org/doi/full/10.1148/radiographics.22.1.g02jae1e1](http://pubs.rsna.org/doi/full/10.1148/radiographics.22.1.g02jae1e1) ▾ [翻译此页](#)

作者: DM Koh - 2002 - 被引用次数: 124 - 相关文章

[全部](#)[图片](#)[新闻](#)[视频](#)[更多 ▾](#)[搜索工具](#)

找到约 1,190,000 条结果 (用时 0.58 秒)

### [Use of Contrast Echocardiography in Intensive Care and at ...](#)

[www.ncbi.nlm.nih.gov](#) > ... > [PubMed Central \(PMC\)](#) ▾ [翻译此页](#)

作者: B Cosyns - 2011 - 被引用次数: 2 - 相关文章

Bedside echocardiography in emergency room (ER) or in **intensive care unit** (ICU) is an .... The frequent **use** of mechanical ventilation, presence of **chest** bandages, and ... studies actually represents the main **indication** of **ultrasound** contrast agents and is .... **Incremental value** of cardiac imaging in patients presenting to the ...

### [Point of Care Cardiac Ultrasound Applications in the ...](#)

[www.ncbi.nlm.nih.gov](#) > ... > [PubMed Central \(PMC\)](#) ▾ [翻译此页](#)

作者: RT Arntfield - 2012 - 被引用次数: 35 - 相关文章

Though the emergency department (ED) and **intensive care unit** (ICU) ... the **indications** and **applications** of basic echocardiographic assessment are quite similar. .... **value** of echocardiography to safely discharge their patients with **chest** pain. .... **thoracic** trauma represents the earliest **use** of limited cardiac **ultrasound** by ...

### [Lung ultrasound in the critically ill - Annals of Intensive Care](#)

[www.annalsofintensivecare.com/content/4/1/1](#) ▾ [翻译此页](#)

作者: DA Lichtenstein - 2014 - 被引用次数: 83 - 相关文章

2014年1月9日 - **Lung ultrasound** is a basic **application** of critical ultrasound, defined as a ... a **use** in traumatology, **intensive care unit**, neonates (the signs are the ... The thickness of this image is roughly 10 cm, a **value** incompatible with a ...

### [Transthoracic US of the Chest: Clinical Uses and Applications](#)

[pubs.rsna.org/doi/full/10.1148/radiographics.22.1.g02jae1e1](#) ▾ [翻译此页](#)

作者: DM Koh - 2002 - 被引用次数: 124 - 相关文章

Evolution of the **chest** is a rapidly developing **application** of **ultrasound** (US). The