

POSTER PRESENTATION

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0391. Comparison of the histopathologic effects on the lungs of two external chest compression devices (lucas versus autopulse) in a swine model of ventricular fibrillation

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From ESICM LIVES 2014
Barcelona, Spain. 27 September - 1 October 2014

Introduction

Given the difficulty of performing efficient CPR compressions, technology has turned to automaticity. LUCAS device has a pneumatically driven piston to compress the heart and uses active decompression suction on the upstroke. AUTOPULSE is a load distributing band compressor, that is mechanically actuated and battery driven. It provides both direct compression and semi-circumferential thoracic compression.

Objectives

Lung injury may occur during cardiorespiratory resuscitation with external chest compression devices. Aim of this study is to compare 2 different external chest compression devices (LUCAS and AUTOPULSE) regarding differences in lung injury that they may cause.

Methods

Forty (40) pigs were randomly allocated into 2 groups. Group L (LUCAS), n=20 and Group A (AUTOPULSE), n=20. After anesthesia, ventricular fibrillation was induced. Five minutes post-cardiac arrest without treatment, resuscitation was initiated. After resuscitation, lung biopsy via a mini-thoracotomy was obtained (right lung lower lobe).

Results

Histopathology findings revealed a heterogeneous interstitial infiltrate and vascular congestion in all samples

studied. There was no statistically significant difference between the two groups. (P>0.05)

Conclusions

LUCAS and AUTOPULSE devices present no histopathological differences concerning lung injury after cardiorespiratory resuscitation.

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Published: 26 September 2014

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doi:10.1186/2197-425X-2-S1-P24

Cite this article as: Pantazopoulos et al.: 0391. Comparison of the histopathologic effects on the lungs of two external chest compression devices (lucas versus autopulse) in a swine model of ventricular fibrillation. *Intensive Care Medicine Experimental* 2014 **2**(Suppl 1):P24.

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