

Category : **Brain: Head trauma**

A212 - Apoptosis activation in bronchoalveolar lavage fluid (balf) corresponded with severity of brain injury-preliminary study

DS Siwicka-Gieroba¹ ; ST Terpilowska² ; MB Barud³ ; WD Dabrowski³

¹Medical University in Lublin, Anaesthesiology and Intensive Care, Lublin, Poland, ²The John Paul II Catholic University of Lublin,, Laboratory of Environmental Biology, Institute of Environmental Engineering, , Lublin, Poland, ³Medical University in Lublin, Anaesthesiology and Intensive Therapy , Lublin, Poland

Introduction:

The mechanism of acute brain injury initiates cascades of consequences which are significant factors of poor neurological outcome.

Methods:

The analysis was performed in patients with severe isolated TBI. Bronchoalveolar lavage fluid were collected at admission, for third and seventh day after incident. Activation of intrinsic, extrinsic and endoplasmic reticulum pathways were measured.

Results:

Results showed significantly increased levels of selected apoptotic factors concentration after 72 hours and on the 7th day after incident We found a significant correlation between apoptotic factors, GCS and 28-day mortality. There were no statistically significant correlations between apoptosis and EVLWI and PVPI.

Conclusion:

Activation and imbalance of apoptotic pathways seems to be an important processes in lungs after severe brain trauma. Activation of apoptosis correlates with the severity of brain injury.

References:

Pelosi P, Severgnini P, Chiaranda M. An integrated approach to prevent and treat respiratory failure in brain-injured patients. *Curr Opin Crit Care* 2005; **11**(1): 37-42.

López-Aguilar J, Villagrà A, Bernabé F, et al. Massive brain injury enhances lung damage in an isolated lung model of ventilator-induced lung injury. *Crit Care Med* 2005; **33**(5): 1077-83.

Tagami T, Nakamura T, Kushimoto S, et al. Early-phase changes of extravascular lung water index as a prognostic indicator in acute respiratory distress syndrome patients. *Ann Intensive Care* 2014; **4**: 27.

Martin LJ, Kaiser A, Yu JW, Natale JE, Al-Abdulla NA. Injury-induced apoptosis of neurons in adult brain is mediated by p53-dependent and p53-independent pathways and requires Bax. *J Comp Neurol* 2001; **433**(3): 299-311.

Fortin A, Cregan SP, MacLaurin JG, et al. APAF1 is a key transcriptional target for p53 in the regulation of neuronal cell death. *J Cell Biol* 2001; **155**(2): 207-16.

Lee KS, Choi YH, Kim YS, et al. Evaluation of bronchoalveolar lavage fluid from ARDS patients with regard to apoptosis. *Respir Med* 2008; **102**(3): 464-9.