

LUNG INFLAMMATORY RESPONSE INDUCED BY OLEIC ACID IS INDEPENDENT OF THE TOLL-LIKE RECEPTOR 4 IN DEFECTIVE LPS SIGNALING MICE

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Increased levels of circulating unsaturated fatty acids, especially oleic acid (OA), are involved in lung injury. The presence of OA in the bronco alveolar lavage (BAL) is related to an increase of severity and bad prognosis. The cell signaling pathway of the inflammatory response due to OA is not established, but seems to be associated to an inhibition of Na⁺, K⁺ATPase. Toll-like receptors 4 (TLR4) were identified as the receptor for Gram-negative bacterial LPS. Fatty acids also activate certain TLRs. In this work we aimed to study pulmonary inflammation induced by OA in C3H/HeJ mice (bearing defective LPS signaling) as compared to control animals (C3H/HeN). OA was injected intratracheally (i.t.) and 24h latter the BAL was collected. Total and differential cell counting and lipid body inclusion counting were performed in this fluid. Results showed that the OA induced an inflammatory response in the lung of both animals C3H/Hej and C3H/HeN, characterized by cell migration, cell activation with lipid body formation, enhanced vascular permeability and cytokine production. In conclusion, our model indicates that the OA induced - lung inflammation is independent of TLR4.

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