

Poster Abstracts

PO-34

EXPRESSION OF FRACTALKINE IN ACUTE LUNG INJURY INDUCED BY PARAQUAT IN RATS

ZHAO Min, WANG Na, ZHU Zhe., Department of Emergency, Shengjing Hospital of China Medical University, Shenyang , 110004, China

Corresponding author: ZHAO Min. Email: zhaom@sj-hospital.org

Objective: Observe the expression of fractalkine (FKN or CX3CL1) in serum and lung tissue in early phases after paraquat (PQ) poisoning in rats. Analyze the effect of FKN on acute lung injury induced by PQ.

Methods: A total of 66 SD rats were divided into two groups in random, namely PQ group (n=36) and control group (n=30). By intra-peritoneal route, PQ (22 mg/kg) was administered to PQ group, and normal saline to control group. Rats were separately sacrificed at 6 h, 12 h, 24 h, 72 h and 120 h after poisoning. Lung coefficient was determined. The levels of FKN in serum and lung tissue homogenate were detected by ELISA. Lung pathological changes were observed by HE staining. FKN changes were investigated by immunohistochemistry staining. Data was analyzed by SPSS19.0.

Results: From 6 h to 120 h after poisoning, parameter determined in PQ group had great changes, compared with the control group. At 6 h, 12 h, 24 h, 72 h and 120 h, lung coefficients were respectively 5.03 ± 0.07 , 5.17 ± 0.10 , 5.46 ± 0.10 , 5.68 ± 0.15 and 5.83 ± 0.11 in PQ group, significantly higher than those (4.49 ± 0.20 , 4.28 ± 0.13 , 4.45 ± 0.17 , 4.31 ± 0.19 and 4.31 ± 0.16) in control group ($P < 0.01$). Levels of FKN in serum were respectively 140.9 ± 15.8 pg/ml, 157.9 ± 17.6 pg/ml, 188.8 ± 24.8 pg/ml, 224.4 ± 18.1 pg/ml and 229.9 ± 10.0 pg/ml, significantly higher than those (121.7 ± 12.8 pg/ml, 121.6 ± 12.1 pg/ml, 118.3 ± 14.0 pg/ml, 122.8 ± 12.4 pg/ml and 120.5 ± 8.8 pg/ml) in control group (6 h $P < 0.05$, others $P < 0.01$). Levels of FKN in lung tissue homogenate were respectively 4222.0 ± 641.1 pg/ml, 5021.0 ± 514.5 pg/ml, 5911.6 ± 478.1 pg/ml, 7092.2 ± 652.9 pg/ml and 7639.3 ± 666.6 pg/ml, significantly higher than those (2860.2 ± 477.3 pg/ml, 3068.9 ± 446.0 pg/ml, 3168.7 ± 728.5 pg/ml, 3178.0 ± 488.2 pg/ml and 3147.3 ± 426.6 pg/ml) in control group ($P < 0.01$). In PQ group, pathological changes were acute lung injury manifested itself in inflammatory cell infiltration, congestion, edema, structural damage, et al. The lung injury aggravated gradually from 6 h to 120 h. In control group, there was no significant change. FKN expressed mainly in bronchial cells, alveolar epithelial cells and pulmonary artery endothelial cells. Where there was more expression of FKN, there were more inflammatory cells. The level of FKN in lung tissue homogenate was positively correlated with lung coefficient ($r = 0.937$). The level of FKN in serum was positively related to that in lung tissue homogenate ($r = 0.968$).

Conclusion: There is correlation between FKN and acute lung injury induced by PQ in rats.

(Keywords) Paraquat; poisoning; fractalkine; lung injury; rat