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Artesunate attenuates lung injury in Paraquat-intoxicated rats via the down-regulation of inflammatory cytokines

Li Jiang
Dalian Medical University, China

Background & Aims: The present study was designed to analyze the dynamic changes in transforming growth factor beta 1 (TGF-β1), interleukin (IL)-10, and tumor necrosis factor alpha (TNF-α) in paraquat (PQ)-intoxicated rats and to evaluate the effects of artesunate on PQ-induced lung injury.

Methods: Sixty healthy male Sprague- Dawley (SD) rats were randomly assigned to the control (n=10), PQ (n=25), and artesunate-treated PQ (n=25) groups. The plasma levels of TGF-β1, IL-10 and TNF-α were measured at 0 (control), 12, 24, 48, and 72 hours after PQ poisoning. The pathological changes in the lung tissues were also examined.

Results: Signs of PQ poisoning began to show at 12 hours after PQ administration; the levels of serum TGF-β1, IL-10, and TNF-α were significantly increased ($P<0.01$), compared with the control group. The effects of artesunate treatment were evident at 12 hours after PQ poisoning and became statistically significant at 48 hours, compared with the control and PQ groups, respectively ($P<0.05$, $P<0.01$).

Conclusions: The PQ-induced lung injury was attenuated by artesunate treatment. In conclusions: IL-10, TNF-α, and TGF-β1 may play an important role in PQ-induced lung injury, which can be prevented by artesunate treatment.

Biography

Li Jiang is currently working in first Affiliated Hospital of Dalian Medical University in China. Research experience includes various programs, contributions and participation in different countries for diverse fields of study. His research interests mainly include lung injury.

fangrong928@163.com

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