

# **Methylprednisolone effects on oxygenation and histology in a rat model of acute lung injury**

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摘要.

## **Abstract**

We examined the effects of methylprednisolone on gas exchange, pressure-volume curve, lavage fluid inflammatory cell counts, protein content, surfactant pool size, and lung histology in a rat model of paraquat-induced lung injury. Twenty-three adult male Sprague-Dawley rats received intraperitoneal paraquat injection (35 mg/kg) and were randomly divided into three groups: (1). control group received no further treatment; (2). 1-dose methylprednisolone group received a concomitant intraperitoneal methylprednisolone injection (30 mg/kg); (3). 3-dose methylprednisolone group received a concomitant and daily intraperitoneal methylprednisolone injection (30 mg/kg) for three doses. Three days after paraquat injection, the rat was ventilated for 90 min, a static pressure-volume curve and bronchoalveolar lavage was performed, and postmortem histology was examined. Surfactant pool size of the 3-dose methylprednisolone group was significantly increased when compared with the control and 1-dose methylprednisolone groups. Methylprednisolone treatment increased oxygenation and the value was statistically significant for 3-dose methylprednisolone group at 90 min of ventilation. Inflammatory cell counts in bronchoalveolar lavage fluid and lung injury score were decreased as the methylprednisolone dose increased. We conclude that high-dose methylprednisolone treatment increased surfactant pool size and improved lung histology of paraquat-injured lungs but this augmentation could not significantly improve oxygenation throughout the ventilation period