

## Dexmedetomidine Inhibits Acute Lung Injury by Up-Regulating miR-144 Expression in Mice

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**SUMMARY.** To evaluate the effect of dexmedetomidine on acute lung injury (ALI) induced by lipopolysaccharide (LPS), evaluate the expression of miR-144 in the ALI model mice, and verify the effect of dexmedetomidine by inhibiting the expression of miR-144 in the role of ALI. 24 mice were randomly divided into four groups: control group, LPS group, LPS+Dex group, and LPS+Dex+miR-144. LPS-induced ALI reduced the expression of miR-144 ( $p < 0.05$ ). Dexmedetomidine inhibited LPS-induced reduction of miR-144 expression in lung tissue and serum of ALI mice ( $p < 0.05$ ); Dexmedetomidine LPS-induced ALI lung W/D weight ratio, LPS-induced MPO activity, and inflammatory factors IL-6, IL-1 TNF- $\alpha$  were significantly reduced ( $p < 0.05$ ); Antagomir144 inhibiting the expression of miR-144 significantly weakened The lung W/D weight ratio of dexmedetomidine to ALI and the LPS-induced MPO activity, as well as the reduction of inflammatory factors IL-6, IL-1, and TNF- $\alpha$  ( $p < 0.05$ ).

**RESUMEN.** Para evaluar el efecto de la dexmedetomidina sobre la lesión pulmonar aguda (ALI) inducida por lipopolisacárido (LPS), se evaluó la expresión de miR-144 en ratones modelo ALI y verificó el efecto de la dexmedetomidina al inhibir la expresión de miR-144 en el papel de ALI. 24 ratones se dividieron aleatoriamente en cuatro grupos: grupo de control, grupo LPS, grupo LPS+Dex y LPS+Dex+miR-144. El ALI inducido por LPS redujo la expresión de miR-144 ( $p < 0,05$ ). La dexmedetomidina inhibió la reducción inducida por LPS de la expresión de miR-144 en tejido pulmonar y suero de ratones ALI ( $p < 0,05$ ); se redujeron significativamente ( $p < 0,05$ ) la relación de peso W/D pulmonar ALI inducida por LPS de dexmedetomidina, la actividad MPO inducida por LPS y los factores inflamatorios IL-6, IL-1 TNF- $\alpha$ ; Antagomir144 inhibiendo la expresión de miR-144 debilitó significativamente la relación de peso W/D pulmonar de dexmedetomidina a ALI y la actividad MPO inducida por LPS, así como la reducción de los factores inflamatorios IL-6, IL-1 y TNF- $\alpha$  ( $p < 0,05$ ).

**KEY WORDS:** acute lung injury, dexmedetomidine, miR-144, up-regulating;

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