

# Acupuncture stimulation of ST36 (Zusanli) attenuates acute renal but not hepatic injury in lipopolysaccharide-stimulated rats.

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## 摘要

### Abstract

**BACKGROUND:** We sought to determine the effects of ST36 acupuncture on sepsis-induced kidney and liver injuries.

**METHODS:** A total of 120 rats were randomized into 10 groups: 1) lipopolysaccharide (LPS), 2) normal saline (N/S), 3) LPS + ST36, 4) ST36, 5) LPS + P-ST36, 6) P-ST36, 7) LPS + Sham, 8) Sham, 9) LPS + P-Sham, and 10) P-Sham groups. Rats in the LPS + ST36, ST36, LPS + Sham, and Sham groups received ST36 (designated as "ST36") or a nonacupoint (designated as "Sham") acupuncture for 30 min followed by LPS or N/S injection. Rats in the LPS + P-ST36, P-ST36, LPS + P-Sham, and P-Sham groups received LPS or N/S injection for 3 h followed by a 30 min of ST36 or a "nonacupoint" acupuncture. Rats were killed at 6 h after LPS injection.

**RESULTS:** LPS caused prominent kidney and liver injuries. The renal and hepatic nitric oxide (NO) concentrations and inducible NO synthase (iNOS) expression were also increased by LPS. ST36 acupuncture pretreatment significantly attenuated the LPS-induced kidney injury and the increases in renal NO concentration and iNOS expression. However, ST36 acupuncture pretreatment did not affect the LPS-induced liver injury and increases in hepatic NO concentration or iNOS expression. Furthermore, ST36 acupuncture performed after LPS did not affect the LPS-induced organ injuries or increases in NO concentration and iNOS expression.

**CONCLUSIONS:** ST36 acupuncture pretreatment significantly attenuated sepsis-induced kidney, but not liver, injury in rats, whereas ST36 acupuncture performed after sepsis induction had no protective effects against sepsis-induced organ injuries