Astragaloside improves outcomes of traumatic brain injury in rats by reducing microglia activation.

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Abstract

Astragaloside (AST) is traditionally prescribed for the prevention and treatment of cerebrovascular diseases. We directly tested the therapeutic effects of AST in a rat model of traumatic brain injury (TBI). One hour after the onset of TBI rats were given Saline (1 ml/kg) or AST (20-80 mg/kg) via i.p. injection. AST causes the attenuation of TBI-induced cerebral contusion, neuronal apoptosis, and neurological motor dysfunction. TBI-induced microglial activation evidenced by the morphological transformation of microglia (or ameboid microglia) and the microglial overexpression of tumor necrosis factor-alpha was reduced by AST. Our results indicate that AST may protect against brain contusion and neuronal apoptosis after TBI by attenuating microglia activation in male rats.