Curcumin cuts acetaminophen-induced hepatotoxicity in mice

January 23 2016

(HealthDay)—Curcumin can attenuate acetaminophen-induced

mitochondrial alterations in the livers of mice, according to an experimental study published online Jan. 15 in the *Journal of Pharmacy and Pharmacology*.

Luis Fernando Granados-Castro, from the National Autonomous University of Mexico in University City, and colleagues examined whether curcumin could attenuate mitochondrial alterations induced by acetaminophen in the livers of mice. Groups of five to six mice received curcumin (35, 50, or 100 mg/kg body weight) 90 minutes before acetaminophen injection. The authors measured plasma activity of alanine aminotransferase (ALT) and aspartate aminotransferase (AST); conduced histologic analyses; and measured mitochondrial oxygen consumption, mitochondrial membrane potential, adenosine triphosphate (ATP) synthesis, and activity of aconitase and respiratory complexes.

The researchers found that curcumin averted acetaminophen-induced liver damage in a dose-dependent manner. Acetaminophen-induced liver histological damage and increment in plasma ALT and AST activity were attenuated with curcumin 100 mg/kg. Using succinate or malate/glutamate as substrates, curcumin attenuated the decrease in oxygen consumption; curcumin also attenuated the decrease in membrane potential, ATP synthesis, and the activity of aconitase and respiratory complexes I, III, and IV.

"These results indicate that the protective effect of curcumin in acetaminophen-induced hepatotoxicity is associated with attenuation of mitochondrial dysfunction," the authors write.

More information: Abstract
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