Dr. Rath Research Institute
CUTTING-EDGE RESEARCH IN NATURAL HEALTH

A nutrient mixture prevents acetaminophen hepatic and renal toxicity in ICR mice

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Acetaminophen is the most widely used painkiller and fever reducing medicine used throughout the world. In the US, acetaminophen is available as Tylenol®, easily obtainable and recommended to everyone including infants without any strong warning about its toxicity. Acetaminophen is a component in more than 600 different medications and thus has the highest potential for accidental overdose in people taking different medicines. Acetaminophen poisoning is also the most common cause of acute fulminant liver failure.

We conducted an in vivo study testing the protective effects of a specific combination of micronutrients against liver and kidney damage caused by an acute administration of acetaminophen. In the experiments, we used two groups of mice: the test group received micronutrient supplementation for two weeks prior the acetaminophen administration and the control group was fed a normal diet. In order to assess organ damage we measured the levels of enzymes indicative of liver function (AST, ALT, and alkaline phosphatase) and specific markers of kidney function (blood urea nitrogen-BUN and creatinine).

While the markers indicative of liver damage were significantly increased in the control group of mice, the mice given the micronutrients showed their substantial reduction. As such, AST was 87% lower than the control group, ALT was 82% lower and alkaline phosphatase was 53% lower indicating less liver damage. Similarly, the kidney function tests including BUN and BUN to creatinine ratio was reduced by 38% and 32% respectively in the supplemented groups confirming the protective effects of these micronutrients against kidney damage by acetaminophen.