



Drug Information Office / Jordan University of Science and Technology

New study finds that adding uric acid to standard stroke clot busters reduces stroke disability

Uric acid is not only a waste product of purine metabolism or an inert compound, as has been believed historically, but also has an important role in many biological functions. Although Uric acid is a powerful antioxidant, it also acts as a pro-oxidant giving rise to an increase in free radicals, endothelial vascular dysfunction, inflammation, changes in nitric oxide production, atherosclerosis and thrombogenesis.¹

Clinically, the harmful pro-oxidant effects predominate over the beneficial antioxidant effects, except in the central nervous system, where the beneficial antioxidant actions seem to prevail.¹

Giving stroke patients uric acid along with standard thrombolysis within 4.5 hours of first symptoms may reduce disability, according to the results of the URICO-ICTUS study.²

Noting that uric acid acts as a free radical scavenger, mopping up the free radicals generated by lack of blood flow during stroke that are believed to cause brain cell death.²

In this study Angel Chamorro and his colleagues randomly assigned 421 stroke patients treated with alteplase within 4.5 hours of symptom onset to a 1-g infusion of uric acid or to placebo by.²

The result was nearly 40 percent treated with uric acid and clot busters were relatively free of disability at 90 days compared to 33 percent of patients treated with a placebo.³

Uric acid produced the greatest benefits for women and patients with high blood sugar and moderate stroke because women are less equipped to combat oxidative stress as the result of their lower uric acid levels. Half of patients in the study were women and the average age of all patients was 76. Most had other medical conditions and were treated at 10 stroke centers around Spain. All patients received the anti-clotting drug tissue plasminogen activator (tPA) and were randomly assigned to receive uric acid or a placebo. Sixty patients died.^{2,3}

While the study group was small and the results will need validation in larger trials, Chamorro said the study's strength is that it involved elderly patients who had more serious strokes and other health problems.³

“That was kind of surprising because everyone knows uric acid has a pretty bad reputation because it is associated with gout attacks, renal problems and perhaps also with cardiovascular disease,” Angel Chamorro said. “But what people do not know so well is that uric acid is an extremely potent antioxidant, which is it prevents the formation of free radicals that can result when a brain artery is blocked.”³

In conclusion, this promising result for uric acid in patients with acute stroke treated with a clot buster within 4.5 hours of symptoms onset offers new hope in a field that was full of failures.

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References:

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