Metformin therapeutic as post-ischemic conditioning agent

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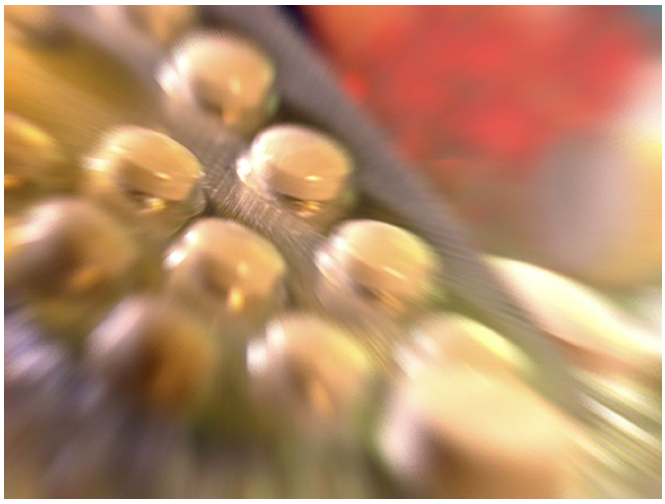

(HealthDay)—Metformin has therapeutic potential as a post-ischemic conditioning agent, according to a study published online June 23 in *Cardiovascular Therapeutics*.

Rajesh Ramachandran, Ph.D., and Mini Saraswathy, Ph.D., from the University of Kerala in Thiruvananthapuram, India, examined the role of metformin in preventing apoptotic events preceding ischemic reperfusion injury and its effect on apoptotic markers.

The researchers found that postconditioning with metformin at a concentration of 2.5 µg/mL effectively maintained cell viability and membrane stability of H9C2 cardiomyoblast cells after ischemic injury. The authors established a decrease in apoptosis cell death via fluorescent staining and Annexin V/FITC flow cytometric analysis. The DNA fragmentation and comet length were significantly reduced in metformin-treated ischemic cells (P = 0.0001). After ischemic injuries, there was an increase in protein carbonyl content and a decrease in nitrate levels, which were alleviated by treatment with metformin. Metformin treatment also enhanced wound closure. Apoptotic proteins such as FASL and anti-apoptotic proteins such as BcL2, BcL, XL, and p21 were synchronized by metformin.

"The results envisage therapeutic potential of metformin as a post-ischemic conditioning agent," the authors write.

More information: Abstract
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