Experimental antiplatelet compound for acute stroke shows promise

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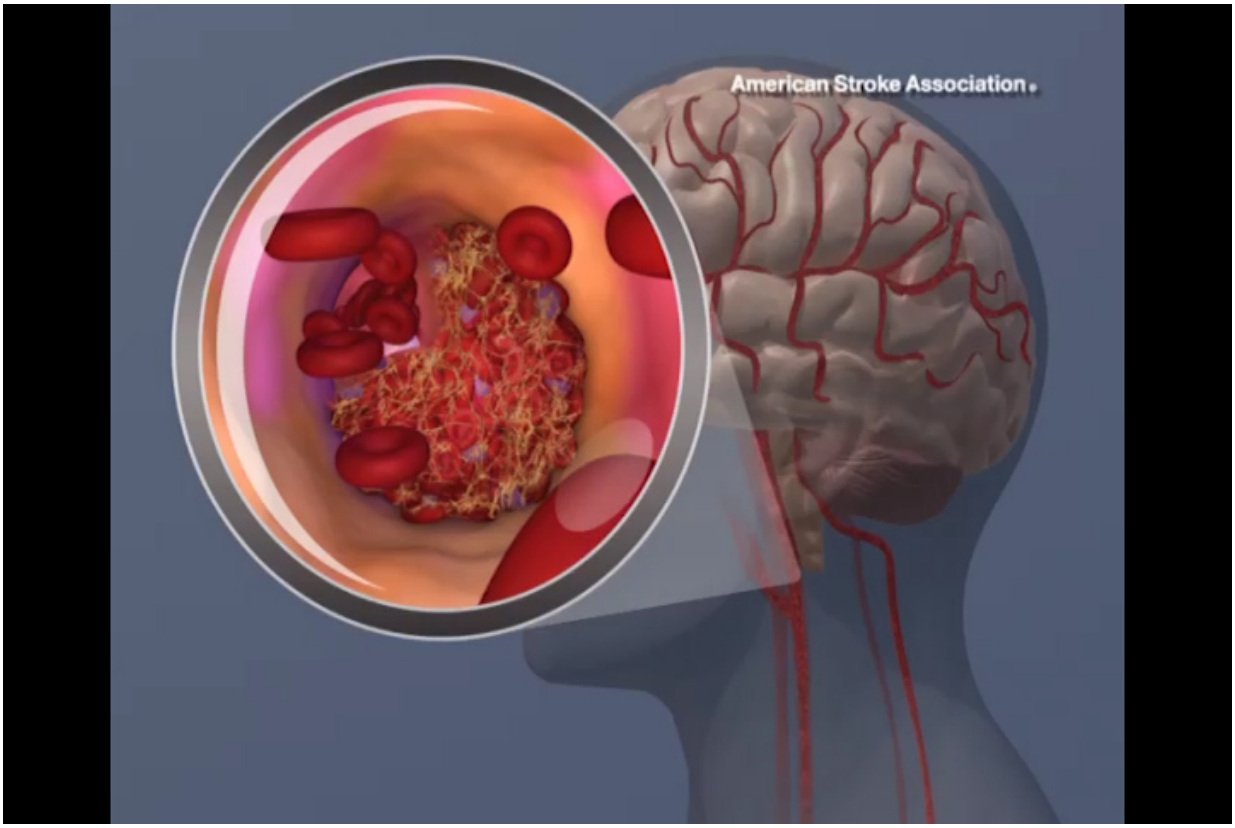

A blood clot forming in the carotid artery. Credit: American Heart Association

An experimental antiplatelet compound inhibited clot formation without increasing bleeding, a common and potentially dangerous side effect of current anticlotting therapies, according to new phase I research in

Arteriosclerosis, Thrombosis and Vascular Biology, an American Heart Association journal.

The results of the industry-sponsored trial are based on a first-in-human study of the new compound called ACT017. The findings suggest that the drug may provide an effective and safer alternative to current antiplatelet therapies used in stroke patients, which can also increase the risk for dangerous bleeding in the brain.

"There is a clear need for a novel antiplatelet agent that resolves platelet aggregation and clot formation without raising the risk for bleeding. Such a therapy would considerably improve and expand our current therapeutic arsenal for the treatment of acute stroke," said Martine Jandrot-Perrus, M.D., Ph.D., study senior author and scientist at France's National Institute of Health and Medical Research (INSERM) and a consultant for Acticor-Biotech, the company that developed the compound and funded the trial.

The drug is an antibody-based compound that inhibits blood platelet aggregation (or clumping) and clot formation by precisely-targeting a protein called platelet glycoprotein VI (GPVI) found in platelets. This protein is critical for clot formation—a process marked by the clumping of platelets—but it does not play a role in regulating bleeding. This feature renders the GPVI protein an ideal target for a drug that inhibits the clumping of platelets but does so without increasing the risk for bleeding.

The trial involved 36 healthy volunteers (23 women and 13 men), ages 22 to 65, divided into six groups. In each group, six participants received intravenous infusions over six hours with various doses of the drug (ranging from 62.5 milligrams (mg) to 2,000 mg).

The drug was well-tolerated at all doses, without serious side effects.

Notably, the compound did not appreciably prolong bleeding time, a marker indicating increased risk for dangerous bleeds. The study also showed that the extent and duration of the therapeutic effect was dose-dependent, reaching maximum effectiveness and duration at 2,000 mg. The most common side effects were mild to moderate headache and head discomfort, which resolved during the study.

"Our results are quite encouraging because they show the candidate compound is well-tolerated at doses even twice as high as the ones targeted for a future treatment and without any signs of bleeding," Jandrot-Perrus said. "Another encouraging finding is the fact that the drug's action on platelets is rapid, specific and largely reversible within 24 hours."

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