Novel Stent Coating May Reduce Clots

Chris Kaiser

A new stent coating showed promise for limiting restenosis while promoting vascular repair, an animal study suggested.

Blocking the expression of CTP synthase 1 (CTPS1) suppressed the proliferation of smooth muscle cells, which cause neointimal hyperplasia [1] -- "one of the major obstacles limiting the long-term clinical efficiency" of percutaneous coronary intervention (PCI), according to Shi-You Chen, PhD [2], from the department of physiology and pharmacology at the University of Georgia in Athens, and colleagues.

But the blockade of CTPS1 did not interfere with -- and actually promoted -- re-endothelialization -- a critical step in healing the arterial injury caused by stent implantation, they wrote in the study published online in the journal *Arteriosclerosis, Thrombosis, and Vascular Biology* [3].

"Currently available anti-neointimal drugs indiscriminately block the proliferation of both smooth muscle cells and endothelial cells, leading to impaired re-endothelialization and prolonged wound healing process," researchers said.

"Therefore, it is critical to develop a novel anti-proliferation strategy that is smooth muscle cell-sensitive," they added.

Chen and colleagues performed in vitro and in vivo experiments in which they discovered that CTPS1, a metabolic enzyme, leads a biochemical cascade that induces smooth muscle cells to proliferate.

When a stent is implanted, the body attempts to protect itself by summoning smooth muscle cells to the site. This can often trigger inflammation and the formation of a blood clots, a small but real risk [4].

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