Stents may reduce heart attacks by delivering downstream medication

September 15 2011

Researchers at Cleveland Clinic have discovered that cardiac patients receiving medicated stents -- a procedure that occurs often when blood vessels are blocked -- have a lower likelihood of suffering heart attacks or developing new blockages in the vessel downstream from the stent.

Stents have been used to prevent re-narrowing of coronary arteries after balloon angioplasty and newer designs have included coatings with medications to prevent re-narrowing from occurring within the stent after implantation. The recent study - led by Richard Krasuski, M.D., Director of Adult Congenital Heart Disease Services and a staff cardiologist in the Section of Clinical Cardiology in the Department of Cardiovascular Medicine at the Miller Family Heart & Vascular Institute at Cleveland Clinic -- suggests that these medicated stents may deliver the medication to the vessel beyond the stent.

In a study recently published in the *American Heart Journal*, Dr. Krasuski and his colleagues demonstrate that patients receiving medicated stents have a lower likelihood of suffering heart attacks or developing new blockages in the vessel downstream from the stent.

"Though there have been concerns about clots forming inside drug-releasing stents, the totality of data suggests that patients receiving drug-coated stents do better than patients receiving bare metal stents," Dr. Krasuski said. "It has not been clear before, however, why preventing re-blockage in the location of a stent would have such a large benefit, but our study suggests that there may be more that the stent is doing. When

blood flows through the stent, medication not only reaches the vessel it is touching but likely the distal vessel as well. In this way it could be having a much more profound effect on the vessel."

If this concept is confirmed it could revolutionize treatment of cardiovascular disease and problems with other organ systems as well. Stents could be altered to deliver many different medications in small amounts directly to the blood vessels. This could maximize the benefits of different drugs and reduce their toxic effects as well as improve patient compliance.

Provided by Cleveland Clinic