ステント留置前の血栓除去術により予後が改善する

JETSTENT：ステント留置前のレオリティック血栓除去はステント留置単独よりも再灌流および短期臨床エンドポイントの成績が良好である

JETSTENT: Rheolytic thrombectomy before stenting leads to better reperfusion and short-term clinical end points than stenting alone

急性ST上昇心筋梗塞に対するダイレクトステント留置術前にレオリティック血栓除去術を施行する方がステント留置術単独よりも臨床成績が良好であるとのリサーチ結果が第59回American College of Cardiology学会で発表された。JETSTENTトライアルでは501人の患者をダイレクトステント留置術または血栓除去術とダイレクトステント留置術を行う群に無作為に割り付けた。一次エンドポイントは、早期ST回復（30分後の50%以上のST上昇軽減）および30日後の梗塞サイズであった。ダイレクトステント留置術に加え血栓除去術を施行された群において、ステント留置術単独群と比べ、有意に多くの患者が指定時間内にST上昇の回復を示した（それぞれ85.8%と78.8%、P=0.43）。1ヵ月後のシンチグラフィーで評価した梗塞サイズには、両群間で有意差はなかった。臨床上のエンドポイントに関しては、1および6ヵ月後の主要な心血管有害事象が血栓除去術群で有意に少なかった（それぞれ3.1%対6.9%、P=0.05および11.9%対20.6%、P=0.012）。このスタディにおける他のサロゲートエンドポイント（myocardial blush gradeおよびcorrected TIMI frame countなど）について有意差は認めなかった。施術時間は血栓除去術を施行した群において有意に長かった（約15分）が成功率は両群間で同等であった。

Full Text

Conducting rheolytic thrombectomy before direct infarct-related artery stenting in patients with acute ST-segment elevation myocardial infarction produced better clinical results than performing direct stenting alone, according to research presented at the American College of Cardiology's 59th annual scientific session.

The randomized, prospective JETSTENT trial enrolled 501 patients at eight sites across Europe and South America between December 2005 and September 2009 to determine how use of a rheolytic thrombectomy system would affect myocardial reperfusion and clinical outcomes for patients with acute ST-segment elevation myocardial infarction. The trial's primary endpoints were ST-segment resolution at 30 to 45 minutes post-procedure and final infarct size at 30 days. The trial's clinical endpoints included a composite of death, myocardial infarction, target vessel revascularization, and stroke at one, six, and 12 months, as well as a composite of death and readmission for congestive heart failure at 12 months.

The study found that significantly more patients receiving rheolytic thrombectomy in addition to direct stenting experienced resolution of their ST-segment elevation in the designated time frame than those patients receiving stenting alone, at 85.8 percent and 78.8 percent, respectively. Additionally, while no significant differences were revealed in infarct size as assessed by 1-month scintigraphy (median infarct size was 11), the researchers found a value of 6 percent in the thrombectomy arm and 12.6 percent in the direct stenting alone arm. The researchers also found a significant decrease in major cardiovascular adverse events both at 1 month and at 6 months for patients randomized to receive rheolytic thrombectomy than patients in the direct stenting alone arm (3.1 percent versus 6.9 percent and 11.9 percent versus 20.6 percent, respectively). The researchers did not find a significant difference between the study's other surrogate endpoints, including myocardial blush grade and the corrected TIMI frame count.

Procedural times were significantly longer (about 15 minutes) for those treated with thrombectomy but procedural success rates were similar in both treatment groups.

"These study results support the routine use of thrombectomy in patients with acute ST-segment elevation myocardial infarction and evidence of thrombus," said David Antoniucci, M.D., head of the Division of Cardiology at Careggi Hospital in Florence, Italy, and the study's lead researcher.

The JETSTENT data contrast with the outcomes of Possis Medical's previous study, the AngioJet rheolytic thrombectomy in patients undergoing PCI for acute myocardial infarction (AiMI) trial.

Specifically, AiMI found that in a sample of 480 patients, rheolytic thrombectomy did not lead to better reperfusion and was associated with a significantly higher mortality rate at 30 days and 6 months postprocedure.

According to Antoniucci, the JETSTENT study - which was designed also to address questions raised by the AiMI findings - differs from the AiMI study in three key ways. First, it includes only patients with angiographically visible thrombus. Second, it uses a "single-pass antegrade" technique in which the thrombectomy device is activated before crossing the lesion and moved in a proximal-to-distal approach in order to cut the risk of embolization. Third, it has a narrow temporal definition of ST-segment elevation resolution (defined as more than 50 percent resolution within 30-45 minutes from the procedure) which allows for greater sensitivity than the 90-minute time frame that was used in the AiMI study.

"Early ST-segment resolution was inversely related to the occurrence of major adverse events, suggesting that it is a reliable marker of reperfusion." Antoniucci said. "Also, multivariable analysis showed that randomization to rheolytic thrombectomy is independently related both to early ST-segment resolution and to the occurrence of major adverse cardiovascular events." Medrad Interventional/Possis funded the study. The funding company was not involved in the management, collection, and analysis of data. Dr. Antoniucci has no personal financial relation with the sponsor.

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