バイパス手術は新世代ステントよりも成績が良好である (Abstract 408-14)

BEST：多枝冠動脈疾患治療において冠動脈バイパス術は依然として最良の治療選択肢である

BEST: Coronary artery bypass graft surgery still best option for treating multivessel coronary artery disease

新世代ステントの出現にもかかわらず、多枝冠動脈疾患に対して冠動脈バイパス術を施行された患者はバルーン血管形成およびステント留置により狭窄解除された患者よりも経過が良好であるとのスタディ結果が、第64回American College of Cardiology年次集会で発表され、*New England Journal of Medicine*オンライン版に掲載された。Bypass Surgery Versus Everolimus-Eluting Stent Implantation for Multivessel Coronary Artery Disease（BEST）トライアルと呼ばれるこのスタディは、4か国27施設で治療を受けた患者880人を対象とした。患者の半数はエベロリムス溶出ステントを用いた血管形成術群、残りの半数はバイパス術群にランダムに割り付けられた。患者は平均4.5年以上追跡された。新たな薬剤溶出ステントを用いて血管形成術を施行された患者は、バイパス術を施行された患者に比べ、スタディにおいてエンドポイントとされた転帰（死亡、心筋梗塞および血行再建術の再施行）のうちの1つのリスクが47%高かった。血管形成術は医用画像処理血管造影によるガイド下で施行された。バイパス術と冠血流予備量比を用いた血管形成術による転帰を比較した新たなスタディが現在進行中である。

Full Text

Despite the advent of a new generation of stents, patients with multivessel coronary artery disease who received coronary artery bypass grafting fared better than those whose arteries were opened with balloon angioplasty and stents in a study presented at the American College of Cardiology's 64th Annual Scientific Session and simultaneously published online in the *New England Journal of Medicine*.

The findings echo past studies, which have shown patients with multiple narrowed arteries have better outcomes with coronary artery bypass grafting (CABG) than with angioplasty.

In the new study, patients receiving angioplasty with the new stents had a 47 percent higher risk of one of the outcomes identified as a primary endpoint in the study: death, heart attack and subsequent procedure to clear blocked arteries, as compared to patients who received bypass. The study reinforces current guidelines, which recommend bypass surgery for treating patients with substantial narrowing in multiple arteries.

"Based on our data, CABG is still the preferred option for multivessel disease," said Seung-Jung Park, M.D., a cardiologist at Asan Medical Center in Seoul, South Korea, and the study's lead author. "We had thought that previous trials may have been limited by their use of first-generation drug-eluting stents, but these results show CABG still leads to better outcomes."

The study, called the Bypass Surgery Versus Everolimus-Eluting Stent Implantation for Multivessel Coronary Artery Disease (BEST) trial, is one of only two randomized controlled trials to compare bypass to angioplasty since the introduction of everolimus-eluting stents, a new generation of drug-eluting stent. The trial's findings align with those from the previous study, called Synergy between PCI with Taxus and Cardiac Surgery (SYNTAX).

The study included 880 patients treated at 27 hospitals in four countries. All patients had multivessel coronary artery disease and were determined to be equally appropriate candidates for either angioplasty or bypass. Half of the patients were randomly assigned to receive angioplasty with everolimus-eluting stent and half received bypass surgery. Patients were tracked for an average of more than 4.5 years.

"During this relatively long-term follow-up, angioplasty was associated with a significant increase in the incidence of the death, myocardial infarction and target vessel revascularization, a difference that was mainly attributed to the higher rate of target-vessel revascularization in the angioplasty group," Park said.

Death, heart attack or a subsequent procedure to clear blocked arteries occurred in 15 percent of patients in the angioplasty group and 11 percent of patients in the bypass group. In addition, the researchers found patients receiving angioplasty were twice as likely to need repeat revascularization and more than 1.8 times as likely to have a heart attack as patients who received bypass.

The study was terminated earlier than planned, limiting its statistical power to detect differences in individual outcomes instead of only composite outcomes. The early termination was due to slow enrollment, thought to be a consequence of the rapid spread and increased appeal of a new angioplasty technique called fractional flow reserve during the later part of the study enrollment period.

The angioplasty procedures in the BEST and SYNTAX studies were guided by the medical imaging technique angiography. Fractional flow reserve, by contrast, allows surgeons to more precisely assess the condition of the arteries based on the pressure of blood as it flows through them and has been associated with better outcomes for angioplasty. A new study is currently underway to compare outcomes from bypass to angioplasty using fractional flow reserve in patients with multivessel coronary artery disease.

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