新たなポリマーにより1年後の標的病変不全が軽減できる

RESOLUTE US：新世代のzotarolimus溶出ステントはステント血栓が少なく標的病変不全率が低い

RESOLUTE US: Next-generation zotarolimus-eluting stent exhibits low rate of target lesion failure with minimal stent thrombosis

ヨーロッパのトライアルを拡大することによりzotarolimus溶出ステント(Resolute®)が米国患者において12ヵ月間の重要な安全性イベント低発現率を維持し臨床的な再狭窄低発現率を達成したと第60回American College of Cardiology学会において発表されJournal of the American College of Cardiology 4月26日号に掲載された。1,402人の患者を組み入れ、メインのスタディでは1,112人の患者に径2.5～3.5mmのResolute®ステントが植え込まれた。このメインのスタディとEndeavor®ステントの臨床試験から得た過去のデータを比較した。Resolute®ステントの12ヵ月間の標的病変不全（TLF）率は3.7%であったのに対し、過去のコントロールにおけるその割合は6.5%であり、今回のスタディで予め設定された非劣性のマージンを満たした（p<0.001）。Resolute®ではまた標的病変の再血行再建術施行率、心臓死率および標的血管による心臓発作率がそれぞれ2.0%、0.4%、および1.3%であり、過去のコントロール群のEndeavor®植え込み患者より低かった（それぞれ4.0%、0.8%、および2.4%）。スタディ患者1,402人全体においてもResolute®ステントにおいては良好な成績が示され、標的病変不全率は4.7%であり、ステント血栓が確実または可能性が高いものの割合は0.1%であった。

Full Text

Expanding on European clinical trials, researchers found that the Resolute® stent achieved a low rate of clinical restenosis while maintaining low rates of important safety events at 12 months in a U.S. patient population, according to research presented at the ACC.11 and published in the April 26 edition of the Journal of the American College of Cardiology.

The RESOLUTE U.S. trial met its primary endpoint of non-inferiority to the historical control, the FDA-approved Endeavor® stent. It is the first U.S. study to observe the effect of drug elution characteristics on clinical outcomes. Both the Endeavor® stent and the Resolute® stent are designed with the same cobalt chromium platform and use the same drug (zotarolimus), but the Resolute® uses a new biocompatible polymer that allows for an extended drug release across approximately six months (compared to a 14-day release with Endeavor®). This extended release is hypothesized to better prevent vessel renarrowing while still maintaining low stent thrombosis rates.

"The Resolute® drug-eluting stent was shown in this study to deliver strong efficacy without a trade-off in safety through one year of patient follow-up," said Martin B. Leon, M.D., associate director of the Center for Interventional Vascular Therapy and Professor of Medicine at Columbia University/New York Presbyterian Hospital. "The clinical results achieved with this new device show the important role that biocompatible polymers play in the design of drug-eluting stents."

Enrolling 1,402 patients across 116 U.S. investigational centers between August 2008 and December 2009, the research team conducted four analyses. The main study included 1,112 patients who received Resolute® stents that were 2.5-3.5 mm in diameter.

The primary endpoint for this group was 12-month target lesion failure (TLF; the composite of cardiac death, target-vessel heart attack, and clinically-driven target lesion revascularization). Clinical follow-up was performed at 30 days, six months, nine months, and 12 months; it will continue at 18 months and annually thereafter through five years post-procedure.

The researchers compared the data from this main study group with historical data pulled from clinical trials of the Endeavor® stent. In order to make accurate comparisons, the team used similar inclusion characteristics, data collection methodologies, endpoint definitions, and statistical analyses. They used propensity score method to adjust for baseline covariates.

After conducting this analysis, the research team found that the Resolute® stent's rate of TLF at 12 months was 3.7 percent, compared with 6.5 percent for the historical control patients who received the Endeavor® stent, meeting the study's pre-set margin of non-inferiority (rate difference equals -2.8 percent, upper one-sided 95 percent confidence interval -1.3 percent, p <0.001).

After looking at the individual components of the primary endpoint, the team found that the Resolute® stent also had lower rates of target lesion revascularization, cardiac death and target-vessel heart attack, at 2.0 percent, 0.4 percent, and 1.3 percent, respectively (compared to 4.0 percent, 0.8 percent, and 2.4 percent for the historical control Endeavor® patients).

Evaluation of the entire 1,402-person study group (which included patients with one or two lesions who received stents ranging from 2.25 mm to 4.0 mm) also showed strong outcomes for the Resolute® stent, including a 4.7 percent rate of target-lesion failure and a 0.1 percent of definite or probable stent thrombosis. The overall population included 34 percent diabetic patients, the highest to date in any of the Resolute? trials.

"The outcomes achieved in the diabetic group are better than expected and we can postulate that the Resolute's® prolonged drug elution profile may contribute to these favorable outcomes in this high-risk group," Leon said.

Although the study was not a randomized trial, the researchers noted that the propensity score method did allow the team to adequately estimate the effect of changing one of the stent's three components.

The study was funded by Medtronic. Leon serves on the scientific advisory board for Medtronic.

ACC2011特集