N-アセチルシステインはMI後の状態を引き上げる (Abstract 2227)

NACIAM：N-アセチルシステインはSTEMIに対しPCIを施行された患者の梗塞サイズを縮小する

NACIAM: N-acetylcysteine reduces infarct size in patients undergoing PCI after STEMI

ニトログリセリン（GTN）静注（IV）にN-アセチルシステイン（NAC）IVを併用することにより、ST上昇急性心筋梗塞（STEMI）に対し経皮的冠動脈形成術（PCI）を施行された患者の梗塞サイズが約3分の1に有意に縮小した、と2016年ESC Congressで発表された。NACIAMトライアルは、緊急PCIを施行され低用量GTN IVも施行されたSTEMI患者112人（平均年齢64歳）を対象とした。MI発症から1週間以内（早期）、および3か月後（後期）に再度施行された心臓磁気共鳴画像検査の結果、NAC投与群ではプラセボ投与群に比べ、梗塞サイズがそれぞれの時期において33%および50%少なかった（両方ともp=0.02）。

Full Text

The addition of intravenous (IV) N-acetylcysteine (NAC) to IV glyceryl trinitrate (GTN) significantly reduced infarct size by approximately one third in patients undergoing percutaneous coronary intervention (PCI) after ST-segment elevation acute myocardial infarction (STEMI), according to Hot Line research reported at ESC Congress 2016.

"Timely and effective myocardial reperfusion by PCI is the treatment of choice for limiting myocardial infarct size and improving clinical outcomes in patients presenting with STEMI. However, additional pharmacological interventions may help to reduce infarct size further," noted Sivabaskari Pasupathy, PhD candidate, from the University of Adelaide, in Adelaide, Australia, who presented the findings at ESC Congress 2016.

"Any intervention that actually reduces myocardial infarct size by approximately a third might reasonably be expected to substantially improve long-term outcomes."

NACIAM (N-AcetylCysteine In Acute Myocardial infarction), a placebo-controlled, double-blind trial, included 112 STEMI patients (mean age 64 years) from 3 Australian hospitals.

All patients underwent emergency PCI and also received low dose intravenous GTN. They were randomized pre-PCI to receive either high dose (15 grams/24 hours) NAC or an identical placebo, both delivered intravenously over 48 hours, "with the hypothesis that NAC might reduce infarct size, either by potentiating the effects of GTN or via 'scavenging' of reactive oxygen species," said Dr. Pasupathy.
Cardiac magnetic resonance (CMR) imaging performed within one week (early) and again 3 months post MI (late) showed that patients who received NAC had reductions in infarct size of 33% and 50% respectively compared to placebo (p=0.02 for both).

There was a similar but not significant trend towards reduction in creatine kinase release.

Additionally, myocardial salvage, measured at one week, was approximately doubled in patients who received NAC (60% vs. 27%, p<0.001), and there was also evidence of accelerated tissue reperfusion and hypochlorous acid "scavenging" in these patients.

Over 2 years of follow-up, the combination of cardiac readmissions and deaths was less frequent in NAC-treated (3 vs. 16 patients, P<0.01).

Safety endpoints including hypotension, bleeding, and contrast-induced nephropathy were similar in both groups.

"Intravenous NAC administration was associated with more rapid chest pain resolution, improved myocardial salvage, a favorable in-hospital safety profile, sustained infarct size reduction at 3 months post-STEMI, and promising clinical outcomes at 2 years," concluded Dr. Pasupathy. "While the results of this study are encouraging, we would prefer to regard NACIAM as the precursor of a follow-up study, sized for clinical end-points," she noted.

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