FX06は心再灌流傷害を軽減する可能性がある

FIREトライアル：フィブリン由来のペプチドは炎症を阻害することにより心筋損傷を軽減しSTEMI後の血管機能を保護する可能性がある

FIRE: A fibrin-derived peptide may reduce damage to the heart muscle by inhibiting inflammation and protecting vascular function following STEMI

フィブリン由来のペプチドFX06は再潅流に成功した急性ST上昇心筋梗塞（STEMI）の心筋壊死を軽減する可能性があるとのFIRE：FX06 In ischemia and Reperfusion（虚血および再潅流に対するFX06）トライアルの結果が、2008年European Society of Cardiology学会で発表された。FX06を再潅流療法中に患者に静脈内投与し、心筋保護効果が心臓核磁気共鳴画像で評価された。FX06は総梗塞サイズを21%減少させたが、FX06とプラセボの差は統計学的に有意ではなかった（21.68g対27.34g、p=0.21）。しかし、FX06はプラセボと比較しnecrotic core zoneを58%減少させた（1.77g対4.2g、p=0.019）。4ヵ月後にはFX06とプラセボとで総梗塞サイズ（15.37g対19.32g、p=0.36）およびscar mass（1.79g対2.84、p=0.16）の有意差はもはや認められなかった。主要な心有害事象もまたFX06群において少なかった。研究者らは、今回の成績はより大規模なトライアルで確認する必要があり、心臓死および心不全の新規発症に関する今後のトライアルの必要性を示唆した。

Full Text

Data presented at the European Society of Cardiology Congress demonstrates the effectiveness of a peptide called FX06 in preventing reperfusion injury following a myocardial infarction. While reperfusion is well established as a standard of care, it paradoxically causes additional damage to heart muscle in patients surviving from these attacks - a phenomenon termed "reperfusion injury". FX06 is a novel compound intended to prevent that damage.

Professor Dan Atar, the Coordinating Investigator of the FIRE (FX06 In ischemia and REperfusion) trial, a Phase II clinical study of FX06, presented the results of the trial on September 2nd in the Hot Line III Session at the European Society of Cardiology Congress in Munich, Germany.

"Re-establishment of blood flow, either by catheter-based balloon-intervention (PCI) or by thrombolysis, is necessary and life-saving in the treatment of acute myocardial infarctions. However, such interventions can lead to further damage to the heart muscle due to blood vessel dysfunction and inflammation," said Dan Atar, Professor of Cardiology at the Aker University Hospital, University of Oslo, Norway. "Based on the FIRE results, FX06 has been shown to reduce damage to the heart muscle by inhibiting inflammation and protecting vascular function. We predict that FX06 may become a novel treatment for STEMI patients undergoing PCI, representing a major advance in acute cardiac care."

The Phase II clinical trial was completed in March 2008, with data indicating a statistically significant reduction in myocardial necrosis following intravenous application of FX06 concurrent with reperfusion. FX06 is a peptide that binds to VE-cadherin, a target on the surfaces of endothelial cells, which form the inner cell layer of blood vessels, thereby preserving blood vessel function. This leads to reduced inflammation, reduced edema and reduced infarct sizes.
The FIRE trial was conducted between October 2006 and March 2008 as a randomized, double-blind, placebo-controlled study involving 234 patients from 26 leading centers of interventional cardiology in Europe. The study evaluated infarct size in patients undergoing percutaneous coronary intervention (PCI) for acute ST-segment elevation myocardial infarction (STEMI). FX06 was administered intravenously to patients during reperfusion treatment, and the effect on heart muscle preservation was then assessed using cardiac magnetic resonance imaging. The primary endpoint was reduction in infarct size at five days after myocardial infarction.

While FX06 reduced the total infarct size by 21%, this difference between the FX06 and placebo groups was not statistically significant (21.68 g vs. 27.34 g; p=0.21). However, FX06 significantly reduced the necrotic core zone by 58% compared with placebo (1.77 g vs. 4.2 g; p=0.019). At 4 months, there were no longer significant differences between FX06 and placebo in total infarct size (15.37 g vs. 19.32 g; p=0.36) or scar mass (1.79 g vs. 2.84; p=0.16). Major adverse cardiac events in the FX06 group were also lower compared to the placebo group, which may indicate an effect of the drug on adverse patient outcome after an infarction.