MI後の魚油に関する有益性が追加された (Abstract 913-08)

OMEGA-REMODEL：オメガ3脂肪酸は心筋梗塞後の傷害心筋を保護するようである

OMEGA-REMODEL: Omega-3 fatty acids appear to protect damaged heart after myocardial infarction

オメガ3脂肪酸摂取は、既に最適な標準治療を受けている心筋梗塞（MI）後間もない既往者の炎症を抑え心機能のさらなる低下を防ぐようである、とのトライアルの結果が第64回American College of Cardiology学会で発表された。研究者らは、MIから回復中で標準的な治療を受けている米国の患者374人を4gのオメガ3脂肪酸またはプラセボを摂取する群にランダムに割り付けた。MI後2～4週および6か月後に再度、血液検査および心臓画像検査の解析が施行された。MI後オメガ3カプセルを毎日6か月間内服した患者は、プラセボを内服した患者に比べ心機能低下を示す確率が39%低かった。オメガ3脂肪酸を内服した患者ではまた、線維化の痕跡が有意に少なかった。特に、6か月後の心筋リモデリングおよび組織線維化のマーカーであるST2の低下率は、治療群においてかなり大きかった。このスタディの多くの患者の6か月後の血中オメガ3濃度の増加は、オメガ3脂肪酸の豊富な食事をする日本人集団の値と同等であった。

Full Text

Taking omega-3 fatty acids appeared to lower inflammation and guard against further declines in heart function among recent myocardial infarction (MI) survivors already receiving optimal standard care, according to results from a randomized, controlled trial presented at the American College of Cardiology's 64th Annual Scientific Session in San Diego.

Patients in the study taking 4 grams of prescription-only omega-3 fatty acid capsules daily for six months after an MI were significantly more likely to show improvements in heart function compared to patients taking a placebo. Heart function was measured by an expansion of the left ventricular end-systolic volume index. Patients taking omega-3 fatty acids also had significantly less evidence of fibrosis. The data suggests that patients who were able to mount a substantial change in levels of omega-3 fatty acids in their blood derived the most benefit.

"Giving a high dose of omega-3 fatty acids soon after a heart attack appears to improve cardiac structure and heart functioning above and beyond the standard of care," said Raymond W. Kwong, M.D., M.P.H, director of cardiac magnetic resonance imaging at Brigham and Women's Hospital in Boston and the study's senior author. "Because this is a unique group of patients with remarkably high adherence to [guideline-directed] treatments for acute myocardial infarction already, we feel fairly confident that the benefits from this therapy are additive. The implications of this study could be fairly large."

Although earlier studies have shown that omega-3 fatty acids may lower the risk of arrhythmias and death from an MI, research has not consistently shown a benefit. Kwong said his research is the first to use quantitative cardiac imaging to look at how omega-3 fatty acids might actually protect the heart after a major MI.

Researchers randomized 374 patients recovering from an MI and receiving standard treatment to take either 4 grams of omega-3 fatty acids or a placebo; groups were balanced in terms of location of the infarct—anterior or non-anterior—and age. Blood work and cardiac imaging were analyzed at two to four weeks post-MI and again at six months. Compared to previous research, this study used a much higher dose of omega-3 fatty acids, 4 grams compared to 1 gram daily, and a small amount of corn oil, which does not contain fatty acids, as the placebo.

By using cardiac magnetic resonance imaging, researchers were able to look at changes in patients' hearts and see the disease process before and after treatment. Adverse changes in left ventricular remodeling and function, in addition to the worsening of fibrosis, were used as surrogates for poor outcomes after MI. Patients taking the omega-3 fatty acids were 39 percent less likely to show a deterioration of heart function as compared to patients taking a placebo. The analysis also looked at key markers of systemic inflammation, which were also more likely to be improved in those taking the fish oil. In particular, the percent reduction in ST2, a marker of the severity of adverse cardiac remodeling and tissue fibrosis, was substantially greater in the treatment arm after six months.

"Omega-3 fatty acids may have anti-inflammatory effects and also promote better cardiac healing," Kwong said. "This is important because other anti-inflammatory agents, including steroids and NSAIDS, have failed to make a difference after myocardial infarction."

Patients in the study who had a 5 percent increase in the amount of omega-3 fatty acid in their blood seem to have the best chance of improving heart function.

"If this becomes a useful therapy, it seems a 5 percent increase in the serum level of omega-3 fatty acids correlates with a 10 percent improvement in left ventricular remodeling," he said. In this study, most (92 percent) of patients randomized to fish oil increased omega-3 fatty acid by at least 5 percent, compared with less than half (42 percent) of patients receiving placebo.

Kwong said the higher-dose omega-3 fatty acids was not found to be associated with any major safety issues, such as increased bleeding.

"It's a very well-tolerated therapy," he said, adding that it is unlikely patients could get the amount of omega-3 fatty acids from diet alone. He said the daily 4-gram dose is roughly equivalent to someone eating a large, 8-ounce serving of salmon every day for six months.

For many years, the American College of Cardiology and the American Heart Association have recommended that people eat fish rich in omega-3 fatty acids at least twice a week because of its potential heart benefits. Kwong said most North Americans do not follow this advice, while Japanese populations with higher levels of omega-3 and an otherwise similar risk profile to North Americans have lower risks of heart disease and sudden cardiac death. The increase in the omega-3 blood content of many patients in Kwong's study at six months was similar to levels found in Japanese populations with a diet very rich in omega-3 fatty acids.

Fatty fish such as salmon, tuna, trout and sardines contain the most omega-3 fatty acids. Fatty acids are a key component of cell membranes and they help with cell signaling, proper immune function and may also improve cognitive functioning.

This study is limited in that it did not investigate the association between omega-3 fatty acids and cardiac events after MI; assessing this relationship would require a large group of patients over many years. It also did not evaluate this treatment immediately after having a heart attack.

The study was funded by the National Institutes of Health. GlaxoSmithKline provided the medication for the study, but the authors report the pharmaceutical company was not involved with the study or its analysis.

ACC2015特集