Atrial Fibrillation: Prevention, Prediction, and Risk Reduction

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Here: how omega-3 fatty acids may help reduce the risk of atrial fibrillation (AF) in postcardiac surgery patients; how incident HF can help predict adverse outcomes in patients with AF; and why an old gout drug may help reduce the risk of AF in patients with heart failure.

At the American College of Cardiology’s 62nd annual Scientific Session, a research presentation examined patients who had undergone cardiac surgery. An interesting result was that therapy with omega-3 fatty acid (or polyunsaturated fatty acids or PUFA) significantly reduced the risk of developing atrial fibrillation (AF).

Dr Mukesh Singh and associates conducted a meta-analysis that included 8 studies with a total of 2687 patients who had similar baseline characteristics and who received PUFA therapy (n=1337) or placebo (n=1387). Results revealed that the treatment with PUFA significantly reduced the incidence of postoperative AF, (odds ratio, 0.75; 95% confidence interval, 0.57 to 0.99; \( P = 0.04 \)). This significant difference suggests that PUFA therapy could reduce the risk of AF in these post-cardiac surgery patients.[1]

CHF and AF
Atrial fibrillation commonly coexists with congestive heart failure (HF). Potpara and colleagues[2] set out to better understand the risk factors for and the predictive implications of the development of incident HF in patients with first-diagnosed AF and structurally normal hearts. They found that baseline history of hypertension, diabetes mellitus, dilated left atrium, and low-normal LVEF (50% to 54%) were multivariable predictors of subsequent HF during the long-term (10 year) follow-up. The finding that incident HF is an independent predictor of adverse outcomes in patients with AF that are perceived as “low risk” based on normal echocardiography could help facilitate identifying patients in this cohort who are actually at increased risk for long-term adverse events.

Allopurinol and AF
A reverse situation occurs in patients who have CHF. Allopurinol has been used to treat gout—a major chronic illness in those with elevated levels of uric acid, which can be precipitated by diuretics. In a recently published article, Hernandez and colleagues[3] noted that elevated serum uric acid levels are an independent marker for morbidity and mortality in CHF: oxidative stress may play a role.

The authors evaluated the effect of allopurinol on the incidence of AF in 603 veterans over a 6-year period. Patients had an ejection fraction of less than 40% and were hospitalized for AF. The 103 patients who were treated with allopurinol were matched with 500 non-allopurinol users. The incidence of AF was 13% lower in the group that received allopurinol (HR, 0.53 (95% CI, 0.28-0.98, \( P=0.04 \)).

These findings will require future validation in double blind randomly assigned placebo controlled trials of some magnitude and duration.

Take-home Points
- Omega-3 fatty acids may help reduce the risk of atrial fibrillation in postcardiac surgery patients.
- Echocardiographic studies may help predict future AF.
- An old gout medication may help patients reduce the risk of AF in patients with CHF.

References


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