Key Summary of Conference Abstract

Genetic Risk Score Associated With Atrial Fibrillation Detected by Insertable Cardiac Monitoring in High-Risk Patients: A REVEAL AF Trial Sub-Study

Background

- The results of the REVEAL atrial fibrillation (AF) trial demonstrated that an insertable cardiac monitor (ICM) could be helpful for diagnosing subclinical/silent AF in patients at high risk for the arrhythmic disorder, but without a previous diagnosis of AF.1
- The REVEAL AF trial also demonstrated that age and body mass index (BMI), but not CHADS2 score (a measurement of stroke risk) predict ICM-detectable AF.1
- Previous studies showed that AF risk assessment can be improved by using an AF genetic risk score (AF-GRS) based on the risk associated with 12 single-nucleotide polymorphisms (SNPs).2,3
- **Objective:** In this follow-up study of patients enrolled in the REVEAL AF trial, investigators evaluated whether the AF-GRS was predictive of incident AF identified by an ICM during a follow-up period of 18 to 30 months.

Methods

- The REVEAL AF trial enrolled 446 patients at high risk for developing AF; 234 provided informed consent for genetic evaluations and were included in this follow-up study.
- Patients were stratified into 5 AF-GRS quintile groups according to a previous population-based analysis: group 1 = lowest risk quintile; group 5 = highest risk quintile.
- Cox regression models were used to evaluate the association between AF-GRS and incident AF while controlling for potential confounding risk factors (age, sex, BMI).

Results

- The median follow-up period was 25 months.
- At 12 months, ICM-detected AF had occurred in 38.9% of patients in the highest AF-GRS quintile, compared to only 24.7% of patients in quintiles 1-4.
- After controlling for differences in age, sex, and BMI, the risk of incident AF was 1.8-fold (95% CI 1.0-3.3, \(P<0.05\)) greater for patients in the highest AF-GRS quintile than for patients in the lowest quintile, and 2.1-fold (95% CI 1.2-3.4, \(P=0.005\)) greater than for patients in quintiles 1-4 combined.

Conclusions

- Based on this study of patients in the REVEAL AF trial, the AF-GRS is predictive of incident ICM-detected AF, with patients in the highest AF-GRS quintile having approximately twice the risk compared to those in the lower quintiles.

**References**