Atrial fibrillation in patients with hypertrophic cardiomyopathy

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Background: Hypertrophic cardiomyopathy (HCM) is associated with complications such as heart failure, atrial fibrillation (AF) and sudden cardiac death. The treatment of AF in HCM patients can be challenging since AF often aggravates symptoms and increases the risk of stroke. Little is known on which factors contribute to the development of AF in these patients.

Purpose: To determine the incidence of AF in Danish HCM patients and identify risk factors that increase risk of AF.

Methods: Using Danish national registers all patients without previous AF, aged 16 or older diagnosed with HCM between the 1st of January 2005, and the 31st of December 2018 were included in the analysis. The association between HCM and incident AF was investigated using multivariable Cox proportional-hazard analysis. Cumulative incidence of AF was calculated using the Aalen-Johansen estimator, taking death as a competing risk into account.

Results: A total of 3,200 HCM patients without prevalent AF were included, median age was 66 years (IQR 55-77) and 48% were female. During the study period, 477 (15%) patients were diagnosed with incident AF. The risk of developing AF was equal between genders and average time from HCM diagnosis to debut of AF was 1260 days. Risk of AF development was increased for patients with prevalent ischemic heart disease (HR 1.33, CI [1.08 – 1.63]) and hypertension (HR 1.34, CI [1.11 – 1.63]) as well as for patients classified as obstructive HCM at diagnosis (HR 1.27, CI [1.06 – 1.53]). Following AF diagnosis, prescription with oral anticoagulants and antiarrhythmic medication increased markedly.

Conclusion: AF is a common complication in HCM. Patients with obstructive HCM, hypertension and ischemic heart disease were at increased risk of developing AF.
Figure 1: CI of AF by gender
Figure 2: HR for AF development