**METABOLOMIC PROFILING IN RELATION TO NEW-ONSET ATRIAL FIBRILLATION IN THE COMMUNITY: THE FRAMINGHAM HEART STUDY**

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Background: Previous studies have shown several metabolic biomarkers to be associated with prevalent and incident atrial fibrillation (AF), but the results have not been replicated.Objectives: To identify metabolite profiles associated with incident AF Methods. We investigated metabolite profiles of 2,458 European ancestry participants from the Framingham Heart Study without AF at the index exam and followed them for 10 years for new-onset AF. Amino acids, organic acids, lipids, and other plasma metabolites were profiled by liquid chromatography-tandem mass spectrometry using fasting plasma samples. We conducted Cox proportional hazard analyses for association between metabolites and new-onset AF. We performed hypothesis generating analysis to identify novel metabolites and hypothesis testing analysis to confirm the previously reported associations between metabolites and AF. Results. Mean age was 55.1±9.9 years, and 53% were women. Incident AF developed in 156 participants (6.3%) in 10 years of follow-up. A total of 217 metabolites were examined, consisting of 54 positively charged metabolites, 59 negatively charged metabolites, and 104 lipids. Several metabolites met the nominal level of significance (p < 0.05). However, none of the 217 metabolites met our a priori specified Bonferroni corrected level of significance in the multivariable analyses. We were unable replicate previous results demonstrating associations between metabolites that we had measured and AF. Conclusions. In our metabolomics approach, none of the metabolites we tested were significantly associated with the risk of future AF.