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Methylation Quantitative Trait Loci Mapping and Methylome Wide Association Study of Post-Operative Atrial Fibrillation after Cardiac Surgery

Abstract

Post-operative atrial fibrillation is associated with an eightfold increased risk of subsequent atrial fibrillation and a higher risk of stroke and cardiovascular death. The goal of my research is to better characterize epigenetic and genetic risk factors in left atrial tissue samples that predispose some patients to post-operative atrial fibrillation after cardiac surgery. In addition, we would like to identify DNA methylation biomarkers in pre-operative blood samples that could be used to predict post-operative atrial fibrillation before surgery. This research seeks to improve the mechanistic understanding of susceptibility to post-operative atrial fibrillation and improve pre-operative prediction with the ultimate goal of matching patients with individualized medical care to reduce the incidence of post-operative atrial fibrillation.