A new estimate of family disease history providing improved prediction of disease risk

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Abstract

Complex diseases often aggregate within families and using the history of family membersb the stratified log-rank family score (SLFS), which incorporates the age of disease onset of family members, gender differences and the relationship among family members. Via simulation, we demonstrate that the new SLFS is more closely associated with the true family risk for the disease and more robust to family sizes than two existing methods. We apply our proposed method and two existing methods to a study of heart disease. The results show that assessing family history can improve the prediction of disease risks and the SLFS has strongest positive associations with both myocardial infarction and stroke.

This was joint work with Leslie A. McClure, Hemant K. Tiwari, and George Howard.