A simpler way to predict heart failure

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(Medical Xpress)—The most widely used models for predicting heart failure rely on a complex combination of lifestyle, demographic, and cardiovascular risk factor information.

But today Vijay Nambi, M.D., Ph.D., and Christie Ballantyne, M.D., of The Methodist Hospital Center for Cardiovascular Disease Prevention and the Baylor College of Medicine presented new data that show two biomarkers can improve heart failure risk prediction as part of a simpler model. Their presentation was part of the American Heart Association's Scientific Sessions 2012 in Los Angeles.

Nambi and Ballantyne said their simpler model could use information from lab reports to assess heart failure risk, and could be useful to both patients and doctors.

Nambi and Ballantyne's model uses age, race, and the blood concentrations of two blood biomarkers—troponin T and NT-proBNP—to show whether or not a patient is at elevated risk for heart failure.

Applying the model to patient data from the ongoing ARIC study (Atherosclerosis Risk in Communities), the researchers found their simple heart failure risk model was comparable to more complex models that take into account age, race, systolic blood pressure, antihypertensive medication use, smoking or former smoking, diabetes, body-mass index, prevalent coronary heart disease and heart rate.

The protein troponin T is part of the troponin complex and is traditionally used in the diagnosis of heart attacks. NT-proBNP is an inactive peptide fragment left over from the production of brain natiuretic peptide (BNP), a small neuropeptide hormone that has been shown to have value in diagnosing recent and ongoing congestive heart failure. The researchers used both these markers in the prediction of future heart failure (over 10 years) thereby understanding which individuals among a general population are at the highest risk of heart failure. Finally, they showed that adding these biomarkers to the existing models resulted in the best risk prediction models.

More information: "High Sensitivity Troponin T and NT-proBNP in Heart Failure Risk Prediction: an Analysis from the Atherosclerosis Risk in Communities (ARIC) Study," Scientific Sessions 2012 of the American Heart Association.

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