

## Varying CRP levels in ethnic groups may affect statin eligibility, heart risk prediction

September 28 2010

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Average C-reactive protein (CRP) values vary in diverse populations — possibly impacting how doctors estimate cardiovascular risk and determine statin treatment, according to a new study in *Circulation: Cardiovascular Genetics*.

CRP is a marker of inflammation, and high levels of it in the blood have been associated with a higher risk for [heart disease](#). But it's uncertain if the association is causal. Statins are a class of cholesterol-lowering drugs that reduce heart risk and CRP. Researchers aren't certain if CRP-lowering contributes to the health benefits of statins.

"CRP may be used at the discretion of the physician as part of a global coronary risk assessment in adults without known cardiovascular disease," according to consensus statements from the American Heart Association and Centers for Disease Control. A CRP value above a cut-point of 3mg/L indicates high risk.

In the recent Justification for the Use of Statins in Primary Prevention: an Intervention Trial Evaluating Rosuvastatin (JUPITER), researchers evaluated the efficacy of statins using a risk cut-point for CRP at values more than 2mg/L. Based on JUPITER's findings, the U.S. Food and Drug Administration recently licensed the use of [rosuvastatin](#) to prevent cardiovascular disease in men over 50 years and women over 60 years who have one other risk factor and CRP greater than 2mg/L.

"The difference in average population CRP values in populations of

different ancestry are sufficiently large as to have bearing on clinical management and statin eligibility based on single CRP cut-point values," said Tina Shah, Ph.D., co-author of the study and a post-doctoral research fellow at University College London.

Researchers conducted a systematic review and meta-analysis of data on 221, 287 people from 89 published studies and discovered that CRP levels differed by ethnicity, even after adjustments for age and body mass index. African-Americans had the highest CRP levels with an average of 2.6 mg/L, followed by Hispanics (2.51 mg/L), South Asians (2.34 mg/L) and Caucasians (2.03 mg/L). East Asians had the lowest CRP levels of 1.01 mg/L.

The rank order remained the same when researchers calculated the probability that people in each ethnic group would exceed the 2 mg/L CRP threshold at any age. More than half of African-Americans and Hispanics would likely exceed the 2 mg/L CRP threshold at 50 years, while less than half of East Asians would surpass the threshold. Likewise, at 60 years, less than 40 percent of East Asians and almost two-thirds of African-Americans and Hispanics would likely have a CRP > 2mg/L.

A genetic analysis in the multi-ethnic Wandsworth Heart and Stroke Study showed that a gene associated with CRP levels varied in frequency by ethnicity. This study was a population-based survey in South London to estimate the prevalence of major heart and stroke risk factors in people of different ethnic backgrounds. An assessment of lifestyle factors showed that [body mass index](#), systolic blood pressure and smoking contributed to differences in CRP between groups, but the majority of the difference in CRP was unexplained.

"There is ongoing debate over the ability of CRP to predict the risk of heart disease over established [cardiovascular risk](#) factors, even in

individuals of European origin where there is the most evidence pertaining to the CRP-coronary disease association," said Aron D. Hingorani, Ph.D., co-author of the study and professor of genetic epidemiology and British Heart Foundation Senior Research Fellow at University College London.

"If clinicians still want to use CRP as part of heart risk prediction, the results of the current study suggest they should bear ethnicity in mind in interpreting a CRP value."

The absolute risk of heart disease for different ethnic groups and individuals should be based on established risk factors using the Framingham risk equation, she said.

Provided by American Heart Association

Citation: Varying CRP levels in ethnic groups may affect statin eligibility, heart risk prediction (2010, September 28) retrieved 20 April 2024 from

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