

Blood tests for inflammation could help prevent heart attack, stroke

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The addition of C-reactive protein or fibrinogen offers a modest improvement to conventional cardiovascular risk modeling, according to a study published in the Oct. 4 issue of the *New England Journal of Medicine*.

(HealthDay)—Among people at high risk for cardiovascular disease, knowing their blood levels of two specific markers for inflammation might help prevent a heart attack or stroke, according to British investigators.

The two markers, C-reactive protein and fibrinogen, are produced in the liver in response to inflammation in the body. Whether measuring their levels can indeed stave off a cardiovascular event is a topic of scientific debate, the researchers said.

The new analysis suggests that although such testing would save some people from suffering a heart attack or stroke, the proportion of those benefited would not be large. The issue then becomes whether

widespread testing is worthwhile.

"In a study of people without known cardiovascular disease, we estimated that under current treatment guidelines, one extra cardiovascular disease outcome would be prevented over a period of 10 years for approximately every 440 people in whom [C-reactive protein] levels were assessed or approximately every 490 people in whom fibrinogen levels were assessed," said lead researcher Dr. Emanuele Di Angelantonio, a lecturer in medical screening at the University of Cambridge.

The report was published in the Oct. 4 issue of the *New England Journal of Medicine*.

For the study, Di Angelantonio's team analyzed 52 studies that included more than 246,000 people who had no history of cardiovascular disease.

In this type of study, called a meta-analysis, researchers attempt to glean patterns from disparate sources to make a point not usually included in the original studies. The weaknesses of a meta-analysis are the inherent problems in the individual studies and the difficulty in fitting the data together.

In the new analysis, the group found that measuring C-reactive protein or fibrinogen, along with other standard tests such as blood pressure and cholesterol, in about 13,000 people identified as being at risk for cardiovascular disease could prevent a few strokes and heart attacks over time.

"If [C-reactive protein] or fibrinogen was assessed in people considered to be at intermediate risk after initial screening with the use of conventional risk factors alone—and if such measurement of a biomarker of inflammation were to be coupled with initiation of statin

[therapy]—our data suggests [that such assessment] could help prevent approximately 30 additional cardiovascular events over the course of 10 years," Di Angelantonio said.

Dr. Gregg Fonarow, professor of cardiology at the University of California, Los Angeles, and a spokesman for the American Heart Association, said: "Many prior studies have demonstrated that blood tests for C-reactive protein and fibrinogen, when assessed in isolation, are predictive of subsequent cardiovascular events.

"However, the extent to which these tests offer incremental value beyond traditional-risk cardiovascular-risk models has not been well defined and is the subject of much debate," he said.

This study suggests that the addition of C-reactive protein or fibrinogen to traditional risk factors does slightly improve risk identification, Fonarow said.

"However, the value of testing appears to be marginal," he said. "It is estimated that it would require screening 400 to 500 intermediate-risk individuals to prevent a single cardiovascular event over a 10-year period."

Moreover, the cost of the test compared to its predictive value may make it cost ineffective, Fonarow said.

"The cost of [C-reactive protein] testing for cardiovascular disease is approximately \$60 to \$150 depending on which laboratory is used, and this cost may or may not be covered by health plans," he said.

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