Medical Xpress

Inflammation markers linked more with fatal than nonfatal cardiovascular events in elderly

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A study published this week in the open access journal *PLoS Medicine* shows that for elderly people at risk of cardiovascular disease, the presence of inflammatory markers in the blood can identify that an individual is at a higher risk of a fatal rather than a non-fatal heart attack or stroke.

Inflammation is an immune response to injury. However, inflammation is also thought to play a role in cardiovascular disease. Previous studies have shown an association between high levels of markers of inflammation in the circulation with a greater risk of a cardiovascular event, such as a heart attack or stroke.

In this study, Naveed Sattar of the University of Glasgow and colleagues used data from an existing trial known as PROSPER (the Prospective Study of Pravastatin in the Elderly at Risk), which involved participants aged between 70 and 82 who had or were at risk of cardiovascular disease. They examined if three inflammatory markers—interleukin-6 (IL-6), C-reactive protein (CRP) and fibrinogen—were each more strongly massociated with fatal cardiovascular events than with non-fatal cardiovascular events in the period of over three years in which the patients in the trial were monitored.

Using several statistical models, the researchers found that in this group of elderly patients increased levels of all three inflammatory markers, and in particular IL-6, were more strongly associated with a fatal heart attack or stroke than with a non-fatal heart attack or stroke. They also

investigated the predictive value of these inflammatory markers—in other words, whether it was useful to include these markers in tools designed to distinguish between individuals with a high and a low risk of heart attacks, strokes and other cardiovascular events. They report that adding IL-6 to the established risk factors in predictive tools—including lifestyle factors such as smoking, high blood pressure and high blood cholesterol, all of which greatly increase the risk of cardiovascular disease—could help better identify those individuals at a risk of a fatal stroke or heart attack, but not those at risk of a non-fatal cardiovascular event.

The findings of the study suggest inflammatory markers may be more strongly associated with fatal heart attacks and strokes than non-fatal cardiovascular events. The researchers acknowledge that these findings now need to be confirmed in younger populations and larger studies to demonstrate an outright association and the design of the current study cannot show whether the proposed association is a causal one. Nevertheless, the findings should stimulate further investigation into whether the application of inflammatory markers may help better predict the risk of deaths from cardiovascular disease, and whether novel treatments which dampen inflammation might help prolong life.

More information: Sattar N, Murray HM, Welsh P, Blauw GJ, Buckley BM, et al. (2009) Are Markers of Inflammation More Strongly Associated with Risk for Fatal Than for Nonfatal Vascular Events? PLoS Med 6(6): e1000099, medicine.plosjournals.org/perl … journal.pmed.1000099

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