

A protein enables cardiovascular risk assessment

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Researchers at the Charité – Universitätsmedizin Berlin have managed to predict the probability of a cardiovascular patient suffering a heart attack, stroke or arterial occlusion within three months. In the long-term, this knowledge may enable targeted preventive measures. The results of the study have appeared in the current issue of the *Canadian Medical Association Journal*.

Cardiovascular diseases are the leading cause of death in the Western industrial world. Around half of all deaths in Germany result from heart or vascular disease. In collaboration with the Universitätsklinikum Tübingen, the research group headed by Dr. Stephan von Haehling from the Department of Cardiology at Campus Virchow-Klinikum examined a total of 2,568 patients between 57 and 79 years of age, who had visited the clinic presenting heart or chest pains. They were suffering from chronic symptoms resulting from a narrowing of the [coronary vessels](#) or had an acute incident, such as a heart attack, due to such changes. Blood was drawn from the patients and the serum frozen at minus 80°C. The samples were then analyzed for the concentration of a specific protein, the [plasma protein](#) PAPP-A (pregnancy-associated plasma protein A).

PAPP-A had initially been detected in the 1970s in the [blood serum](#) of pregnant women. The concentration of this protein in the blood of pregnant women provides indications of [genetic changes](#) in the DNA of the fetus, and is usually used for fetal screening. Since 2001, researchers have been working on the possibility of also using PAPP-A for assessing the risk in association with cardiovascular diseases.

The current study has demonstrated that all patients, who suffer a heart attack, stroke, arterial occlusion or die within 90 days following the first examination, exhibit a higher PAPP-A concentration in their blood serum than patients without such events in the same period. In addition, it emerges that the type of underlying disease, the sex and [body mass index](#) do not have any influence on the concentration of the protein. The results of the study suggest that the PAPP-A concentration is a strong, independent biomarker for predicting the probability of a patient with heart complaints suffering from a secondary disease in the short-term. "The assessment of future risks for patients with cardiovascular disease is a key medical task. With the help of a blood test, the progression of a disease in cardiac patients could be predicted significantly better in the future, thus reducing the severe consequences", explains Dr. Stephan von Haehling.

More information: von Haehling, S. et al. 2013. Value of serum pregnancy-associated plasma protein A for predicting cardiovascular events among patients presenting with cardiac chest pain, *Canadian Medical Association Journal*. doi:10.1503./cmaj.110647.

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