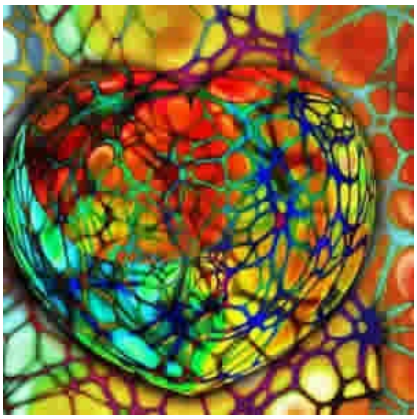
HealthManagement.org
Promoting Management and Leadership

Similarity between high-risk atherosclerotic plaque and cancer cells



A surprising discovery by Lund University researchers may lead to a better approach in the diagnosis and treatment of atherosclerotic plaque. New findings show that inflamed, unstable plaque has a metabolism that distinguishes them from stable plaque. Interestingly, the results also show similarities between metabolism in unstable plaque and cancer cells.

According to the European Heart Journal study, analysis of plaque removed by surgery reveals that the metabolism of unstable plaque seems to be reprogrammed in the same way as in white blood cells that cause inflammation. The results suggest that treatment with drugs that counteract the altering of metabolism could be a new approach to limit the inflammation in plaque that causes cardiovascular disease.

"The altered metabolism we have identified in high-risk plaque is also present in cancer cells. Just as the metabolism in cancer cells is reprogrammed to be able to digest sugar quickly, the sugar uptake of the dangerous plaque seems to be greater than that of stable plaque", explains Harry Björkbacka, associate professor of experimental cardiovascular research at Lund University.

The difference in metabolism between unstable and stable plaque indicates that cardiovascular disease, like cancer tumours, might be limited through treatment with drugs that attack the metabolism. The next step for the researchers behind the study is to attempt to establish this link.

"The discovery that high-risk plaque, unlike stable plaque, has a reprogrammed metabolism, opens up new opportunities for identifying the dangerous plaque for instance by visualising the uptake of nutrients specific to the re-programmed metabolism using a PET camera," says Björkbacka.

At present, there are no precise methods for identifying and effectively treating high-risk plaque that can lead to cardiovascular disease. To a certain extent, the size and location of the plaque can be detected using ultrasound. In cases where it is thought to be high-risk, an intervention is required to insert a stent or to remove the plaque.

Björkbacka and his colleagues plan to investigate exactly which cells in the plaque reprogramme their metabolism. The research team will also map more details of the particular metabolism present in high-risk plaque.

The current study analysed plaque from 159 patients at Skåne University Hospital (SUS) in Malmö. The plaque is kept in a plaque biobank of over 900 samples that enables unique research on the causes of cardiovascular

disease.

Source: European Heart Journal
Image Credit: Pixabay

Published on : Tue, 24 Apr 2018