

Statins the victor of coronary artery disease but is there more?

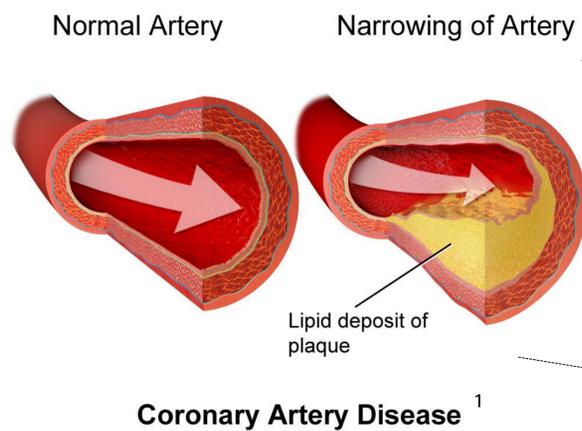
Sanjay Bhandari

Department of Cardiovascular Sciences, University of Leicester, Glenfield Hospital, Leicester
Email: ssb17@le.ac.uk Supervisors: Dr Donald Jones & Professor Leong Ng

What is Coronary Artery Disease?

Coronary artery disease (CAD) is due to the build-up of fatty deposits in the arteries that supply the heart which can cause chest pains ranging from angina to heart attacks.

It is a leading cause of death worldwide.



What are the Causes?

Risk factors include high blood pressure, diabetes, smoking & high cholesterol.

What are Statins?

Statins are the main treatment for high cholesterol.

Block the synthesis of cholesterol in the body → Plaque formation ↓

Health benefits are well founded with more patients surviving after heart attacks.

Survival benefit in patients with CAD cannot be fully explained by simply ↓ cholesterol

Other mechanisms may be involved which mediate the health benefits.

Aim

There is considerable controversy in the media regarding statins.

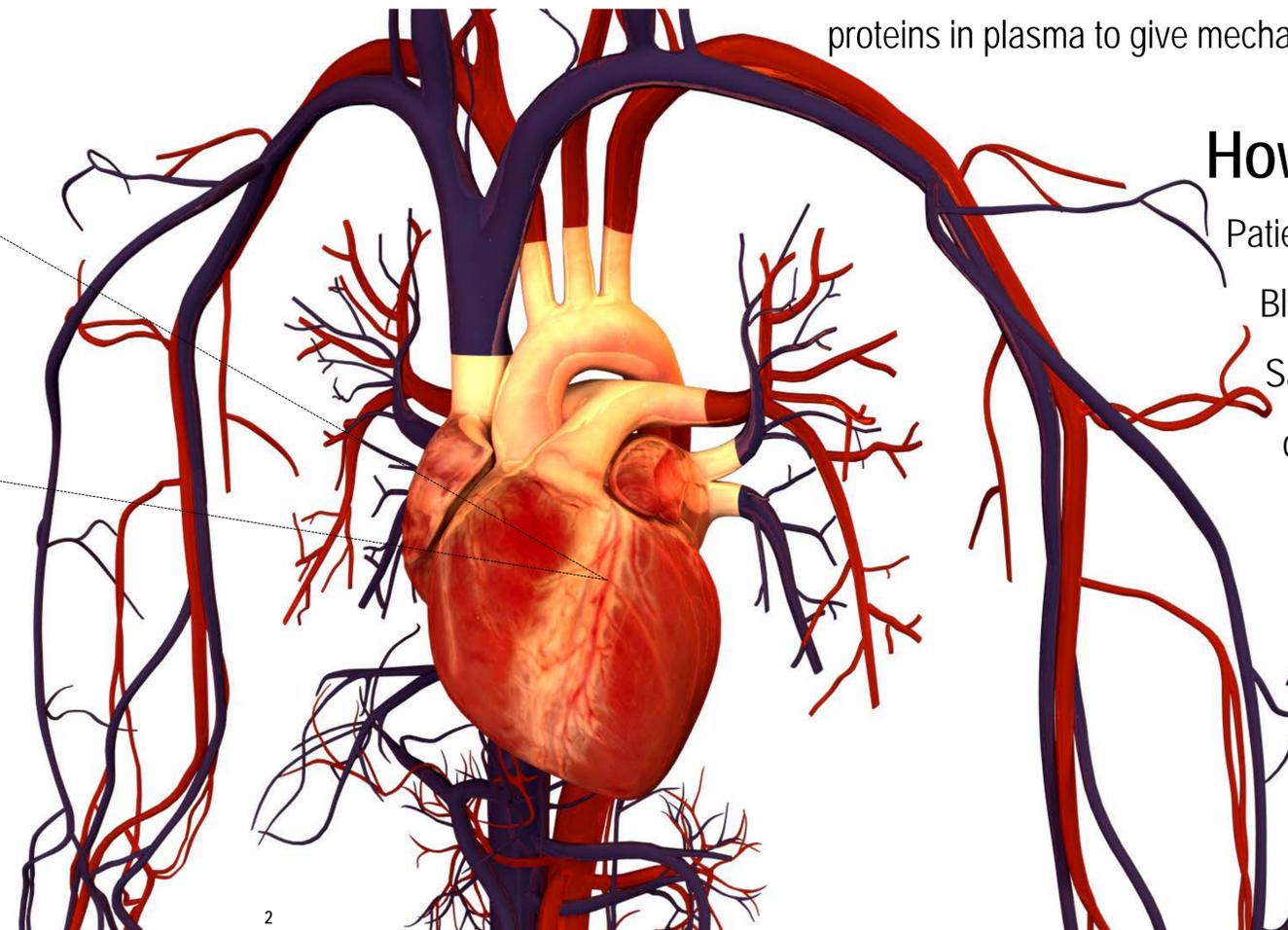
The aim of this study was to investigate the effect of statin therapy on the modulation of proteins in plasma to give mechanistic clues to their protective/harmful effects.

How was this achieved?

Patients with high cholesterol were recruited.

Blood was taken before and during statin treatment.

Samples were prepared and analysed on a high definition mass spectrometer.



The picture above represents the small protein fragments that are separated according to their shape, enabling the discovery of novel proteins and the identification of novel pathways.

Interesting findings

Statins ↑ proteins concerned with the microscopic framework of cells → plaque stabilisation

Furthermore, statins increased the levels of proteins that have anti-cancer & anti-inflammatory effects.

Surprisingly, statins ↓ a protein called adipisin, which stimulates insulin release, possibly leading to high sugars and eventually to diabetes.

This may explain the controversial link between statin use and the development of diabetes.