

Blood pressure is 'in the brain'

The cause of high blood pressure may lie within the brain, rather than with problems relating to the heart, kidneys or blood vessels, research suggests.

Scientists at Bristol University say the findings could lead to new ways of treating the condition, which affects about one in five Britons. They isolated a protein, JAM-1, in the brain which appeared to trap white blood cells, obstructing blood flow. This can cause inflammation and result in poor oxygen supply to the brain.

Brain blood pressure

Professor Julian Paton and colleagues believe these, in turn, trigger events that raise blood pressure, the journal *Hypertension* reports.

Their studies in rats show JAM-1 is linked to raised blood pressure, but the exact mechanisms behind this are still unclear. They are now looking at the human brain to understand more.

Professor Paton explained: "The future challenge will be to understand the type of inflammation within the vessels in the brain, so that we know what drug to use, and how to target them.

"JAM-1 could provide us with new clues as to how to deal with this disease.

"We are looking at the possibility of treating those patients that fail to respond to conventional therapy for hypertension with drugs that reduce blood vessel inflammation and increase blood flow within the brain."

Drug target

Professor Jeremy Pearson of the British Heart Foundation, which funded the latest work, said: "This exciting study is important because it suggests there are unexpected causes of high blood pressure related to blood supply to the brain. "It therefore opens up the possibility of new ways to treat this common, but often poorly managed, condition."

It has been known for some time that the brain can affect blood pressure.

A team of researchers, led by Neurosurgery expert Mr Alex Green of Oxford's John Radcliffe Hospital, found they could make patients' blood pressure increase or decrease by stimulating very specific regions of the brain with electrodes.

Mr Green said the latest work was "very exciting" and that it suggested JAM-1 could be a good target for new blood pressure therapies.

Professor Graham MacGregor, chairman of the Blood Pressure Association, cautioned that the work was at a very early stage and much more extensive research was needed.

He said blood pressure medicines currently prescribed by doctors could be very effective, provided they were taken correctly and in combination with leading a healthy lifestyle.

Although high blood pressure, also known as hypertension, can cause headaches, dizziness and problems with vision, the majority of people with the condition do not display any noticeable symptoms.

It can lead to heart attack, stroke and kidney damage, but medication can be used to control its effects if changes to lifestyle fail to lower blood pressure.

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