

Anti-inflammatory chemical could prevent stroke damage

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(Medical Xpress) -- Drugs that block inflammation in the brain could help patients who have a stroke or a brain haemorrhage, Manchester scientists said today (5 December) at the British Society for Immunology Congress in Liverpool.

Inflammation occurs when a person has a [stroke](#), haemorrhage or trauma. Whilst it is a necessary part of the process to repair the damage to the brain, excessive inflammation causes further damage. Inflammation can be sustained for long periods of time and can contribute to brain degeneration, for example in Alzheimer's, Parkinson's and multiple sclerosis.

A naturally-occurring chemical known as IL-1Ra is used to treat inflammatory conditions such as rheumatism, but until recently scientists thought it could not cross from the blood stream into the brain. However, Professor Nancy Rothwell, a neuroscientist at The University of Manchester, and her colleagues have shown in humans as well as in mice and rats that blocking interleukin 1, the chemical that regulates inflammation, can enter the brain.

"In a series of pharmacokinetic studies, we have looked at what happens to IL-1Ra when it is injected in humans and animals," said Professor Rothwell. "IL-1Ra is a safe and effective treatment and we now know that it can cross into the brain. Once in the brain, it blocks the interleukin and helps to prevent the long-term damage caused by too much [inflammation](#)."

IL-1Ra also markedly improves traumatic brain injury in rodents and has shown promise in a Phase II clinical trial in stroke patients.

“The ability of the inflammatory processes to repair, yet cause further damage, is a delicate balance of a cascade of reactions to trauma which we don’t fully understand,” said Professor Rothwell. “However, the results are encouraging, and we are now embarking on trials of IL-Ra in patients who have had a stroke or a brain haemorrhage.”

Provided by University of Manchester

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