Medical Xpress

Researchers identify a cell type that limits stroke damage

January 27 2009

A research team including Serge Rivest of University Laval's Faculty of Medicine has demonstrated the existence of a type of cells that limits brain damage after a stroke. The study was recently published in the online version of *Nature Medicine*.

Laboratory experiments showed that three days after a stroke, the affected area of the brain is 20% larger in mice without regulatory T (Treg) cells than in normal mice. Effects on locomotor control are also more severe in mice lacking this type of cells.

"These results lead us to believe that we could better preserve crucial functions like sight, speech, or control of the limbs if we rapidly stimulated the production of Treg cells in stroke victims," commented Professor Rivest. "We are particularly enthusiastic about this discovery because we already know what chemicals stimulate the production of Treg cells," continued the researcher. "So a treatment may be available in the not too distant future. We also believe that the protective effect of Treg cells could be used to treat other types of brain damage, especially that caused by head injury."

Part of the brain damage occurring after a stroke is caused by the body's immune response. Cells such as microglia and lymphocytes provoke harmful effects similar to those observed during nervous system infections. When performing their cleaning functions, these cells also attack healthy cells, enlarging the damaged area of the brain and threatening certain brain functions. Researchers had suspected the

existence of a mechanism that slows this harmful effect of immune cells in the brain, but no one had yet been able to demonstrate it.

Treg cells, produced in the bone marrow and other organs of the immune system, migrate to the brain during the first few days after a stroke. They limit the extent of secondary damage by blocking the production of neurotoxins and modulating the action of lymphocytes and microglia in the brain.

Source: Université Laval

Citation: Researchers identify a cell type that limits stroke damage (2009, January 27) retrieved 10 May 2024 from https://medicalxpress.com/news/2009-01-cell-limits.html

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.