

Clingy platelets suggest potential treatment strategy for rheumatoid arthritis

August 29 2013

No one likes clingy people, but "clingy" blood platelets may offer hope for millions of people with rheumatoid arthritis. According to new research findings published in *The Journal of Leukocyte Biology*, a sub population of immune cells (lymphocytes) known to play a significant role in rheumatoid arthritis has platelets attached to their surface. Those attached platelets reduced the ability of the immune cells to cause disease by reducing their activity levels and ability to spread. This opens the door to new investigations into treatments that ultimately bind platelets to lymphocytes. In addition, understanding this process may serve as a tool for better being able to predict the severity of the disease.

"We hope with this knowledge to contribute to the reduction in the chronicity of inflammatory diseases, one of the main aspects that compromise the quality of life of the patients," said Silvia Vidal, Ph.D., a researcher involved in the work from the Department of Immunology at the Institut Recerca of the Hospital Santa Creu I Sant Pau in Barcelona, Spain.

To make this discovery, scientists found specific platelet markers on the surface of lymphocytes from peripheral blood of healthy donors by flow cytometry. Visual confirmation that these markers belonged to platelets attached to lymphocytes was achieved by confocal microscopy. In [cell cultures](#), those lymphocytes with bound platelets were less sensitive to activation and proliferation, and they produced less [inflammatory mediators](#). Researchers analyzed the frequency of these platelet-bound lymphocytes in the peripheral blood of 20 rheumatoid arthritis patients.

Associations were established between clinical parameters and activity disease scores and the frequency of platelet-bound lymphocytes.

"This report expands our understanding of how the mechanisms of inflammation operate and reveal new potential ways we can bring it under control," said John Wherry, Ph.D., Deputy Editor of the *Journal of Leukocyte Biology*. "Defining how platelets regulate other immune cells by binding to their surface and influencing their role in inflammation, is an important step toward new platelet-based treatments to control damaging [inflammatory diseases](#) caused by many [immune cells](#)."

More information: Carlos Zamora, Elisabet Cantó, Juan C. Nieto, M. Angels Ortiz, Cesar Diaz-Torné, Cesar Diaz-Lopez, Josep M. Llobet, Candido Juarez, and Sílvia Vidal. Functional consequences of platelet binding to T lymphocytes in inflammation. *J Leukoc Biol*, September 2013, 94:521-529; [DOI: 10.1189/jlb.0213074](https://doi.org/10.1189/jlb.0213074)

Provided by Federation of American Societies for Experimental Biology

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