Stop the bleeding: New way to restore numbers of key blood-clotting cells

October 25 2010

Platelets are cells in the blood that have a key role in stopping bleeding. Thrombocytopenia is the medical term used to describe the presence of abnormally low numbers of platelets in the blood. Platelet transfusion is used to treat several causes of thrombocytopenia, but there is a shortage of donors. Mortimer Poncz and colleagues, at Children's Hospital of Philadelphia, working with mice, have now identified a potential new approach to platelet replacement therapy that circumvents the problem of donor shortage.

Platelets in the blood arise from cells known as megakaryocytes. In the study, Poncz and colleagues found that mature megakaryocytes that were infused into mice could generate platelets of normal size and function.

They therefore are hopeful that it might be possible to treat individuals with thrombocytopenia through mature megakaryocyte infusion, although they estimate that 10^9 mature megakaryocytes might be needed for an average 70-kg patient.

Although Andrew Leavitt, at the University of California, San Francisco, notes in an accompanying commentary, that this might be a low estimate, he discuses why the new data generated by Poncz and colleagues are an important step forward in identifying new approaches to platelet replacement therapy.

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Provided by Journal of Clinical Investigation