

Tiny blood cells could protect against cerebral palsy

August 2 2019



(L-R) Study leads Dr Samir Taoudi and Dr Alison Farley. Credit: Walter and Eliza Hall Institute of Medical Research

Platelets—tiny cells critical for blood clotting—could be the key to protecting against brain damage occurring during pregnancy or around the time of birth.

Information gained from the pre-clinical study led by Dr. Alison Farley and Dr. Samir Taoudi from the Walter and Eliza Hall Institute could enable doctors to intervene at the right time to prevent [brain](#) bleeds—a significant risk factor for cerebral palsy.

Platelet numbers significant

Cerebral palsy is a physical disability impacting more than 40,000 Australians and 17 million people worldwide. It can affect a person's posture, balance and ability to move, communicate, eat, sleep and learn, with differing levels of severity.

Many of the causes of cerebral palsy are unknown, but brain bleeds occurring around the time of birth or in newborns are recognised as a significant risk factor.

Dr. Farley said low numbers of platelets could be responsible for brain bleeds in [babies](#), referred to as prenatal or neonatal stroke, and the onset of cerebral palsy.

"Our research in laboratory models has shown that platelets are critical for the integrity of blood vessels in the brain. We suspect that low platelet numbers in developing and newborn babies could result in weakened blood vessels in the brain. This may predispose a baby to stroke and potentially cerebral palsy," she said.

"Past research has shown that many babies at risk of cerebral palsy—such as those admitted to [neonatal intensive care](#) and those with extremely low birthweights—have abnormally low numbers of platelets in their blood."

Opportunity for intervention

Dr. Farley said that a \$250,000 Project Grant from the Cerebral Palsy Alliance Research Foundation would enable the researchers to determine the healthy range of platelets levels in babies before and around birth.

"Doctors already have the ability to measure platelet numbers in babies before birth, and safely increase them if necessary," Dr. Farley said.

"Our goal is to provide critical knowledge about the developmental stages and processes for which platelets are required. This will hopefully provide us with the optimal preventative window to combat brain bleeds, stroke and prevent the onset of cerebral palsy.

"Given the capabilities that already exist for measuring and increasing [platelet](#) numbers we believe the outcomes of our research could be applied to the [clinical setting](#) with relative ease and within a short timeframe."

Supporting exciting advances

Since 2006, the Cerebral Palsy Alliance Research Foundation has awarded more than \$48 million to over 500 recipients. These grants, selected on scientific merit by highly regarded international reviewers, have supported group projects and individual awards across the globe.

Head of Research at the Cerebral Palsy Alliance Professor Iona Novak said it was wonderful to see one of the world's top research institutes focus efforts on the prevention of cerebral palsy. "These are exciting times with advances in the prevention and early diagnosis of cerebral palsy," she said.

Macquarie Group Foundation Chair of Cerebral Palsy Professor Nadia Badawi AM said the combined research efforts between clinicians and researchers over the last ten years had resulted in a reduction in the incidence of [cerebral palsy](#) in Australia from one in 500 children to one in 700 children.

"However, more work needs to be done and it is imperative that we continue to push forward with advances in this space and invest in research," she said.

Provided by Walter and Eliza Hall Institute of Medical Research

Citation: Tiny blood cells could protect against cerebral palsy (2019, August 2) retrieved 26 March 2023 from <https://medicalxpress.com/news/2019-08-tiny-blood-cells-cerebral-palsy.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.