New treatments for blood clots on horizon

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Researchers have made a discovery that could lead to new therapies for treating heart attack and stroke patients.

Published in *Nature Communications*, the study led by Monash researchers, has uncovered a unique approach to prevent platelet function, responsible for forming blood clots.

Blood clots are the cause of heart attacks and most strokes, which are the most common cause of death and disability in the world.

Dr Justin Hamilton, from the Australian Centre for Blood Diseases (ACBD) at Monash University, said drugs that prevented platelet function were the leading approach for heart attack and stroke prevention, however, many patients did not respond to current therapies.

"Our research has discovered that if we block a particular enzyme involved in platelet formation then blood clots literally disintegrate before our eyes."

"One of the most interesting aspects of these findings is that the clot-stopping approach we've discovered here is different to how all current drugs work."

"Current drugs such as aspirin block the signals that instruct platelets to form a clot, whereas our discovery rearranges the way that the cell is built – stopping it from doing its job and forming a clot."

Dr Hamilton's team have discovered that an enzyme controls the creation of the membrane structure of platelets, rendering the cells much less effective at blood clot formation.

Dr Hamilton said that new drugs blocking this enzyme would have the potential to improve heart attack and stroke prevention to help those patients who are resistant to existing therapies.

The team is now working on developing such drugs and testing whether

they might be useful as a preventative treatment for heart attack and stroke patients.

Provided by Monash University