Platelet FcGammaRIIa Expression in Patients with Previous Heart Attack; Pilot

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Abstract

Dual anti-platelet therapy is currently the treatment for many cardiac patients. It has seemed to be effective in reducing rates of ischemic events but has also been seen to put patients at an increase risk for major bleeding. FcGammaRIIA (FcγRIIA), also known as CD32, is a type I transmembrane protein that is a receptor for the Fc region of IgG. These receptors are present on monocytes, neutrophils, platelets, B cells, eosinophils, basophils, and trophoblasts. Recent clinical studies have been observing these receptors in correlation with platelets and cardiac events. To determine if the amount of expression of FcγRIIA receptors correlate with an increase risk of a cardiac event, patients who have had more than one heart attacks in the past 3 years and patients who have had only one attack without recurrence in the past 2 years were asked to participate in this study. Blood samples were obtained into syringes that were preloaded with CTI (corn trypsin inhibitor). Platelet activation by low concentrations of agonists and FcγRIIa expression were determined by flow cytometry. Patients who have experienced multiple MIs seemed to overall have a higher expression of FcγRIIA on their platelets than those who have only had one MI. The activation of the platelets by agonists were similar in both patient groups and did not directly correlate to multiple MIs vs single MI. This is still an ongoing study. We hope to see a more drastic difference in the expression of FcγRIIA between the two patient groups.