Evaluation of Abciximab Inhibition of Platelet Aggregation Using ICHOR Hematology Analyzer

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Platelet receptor blockade has improved the safety of patient undergoing PTCA by reducing the incidence of acute thrombosis and early reclosure. In high-risk patients, Abciximab (ReoPro®) a blocker of the Gp IIb/IIIa platelet receptor site has improved clinical PTCA outcome. This study examined the ability of the ICHOR near patient hematology analyzer to assess whole blood platelet aggregation in patients undergoing angioplasty treated with ReoPro®. Baseline platelet function was analyzed by obtaining baseline platelet count and percent platelet aggregation when exposed to 20 uM ADP. Baseline platelet count was $201 \pm 57 \times 10^3$/uL. Baseline ADP aggregation was $84.4 \pm 16.3\%$. The 10 PTCA patients had a pre-aggregation of $88.0 \pm 12.4\%$ and after ReoPro® an aggregation of $26.0 \pm 18.6\%$ ($p<0.05$). Serial measurements of platelet inhibition showed a variable response. This study documented the ability of ReoPro® to inhibit ADP induced platelet aggregation in patients undergoing PTCA. Other intravenous and oral Gp IIb/IIIa platelet inhibitors are currently beginning clinical use. The ICHOR can assess efficacy of these new agents while patients are in the catheterization laboratory undergoing interventional procedures. Further clinical studies are needed to document the usefulness of online analysis of platelet receptor blockade.

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