

Abciximab

Abciximab (previously known as **c7E3 Fab**), a glycoprotein IIb/IIIa receptor antagonist manufactured by Janssen Biologics BV and distributed by Eli Lilly under the trade name **ReoPro**, is a platelet aggregation inhibitor mainly used during and after coronary artery procedures like angioplasty to prevent platelets from sticking together and causing thrombus (blood clot) formation within the coronary artery. It is a glycoprotein IIb/IIIa inhibitor.^[1]

While abciximab has a short plasma half-life, due to its strong affinity for its receptor on the platelets, it may occupy some receptors for weeks. In practice, platelet aggregation gradually returns to normal about 96 to 120 hours after discontinuation of the drug. (Tanguay, J.F., *Eur Heart J* 1999; 1 (suppl E): E27-E35 Abciximab is made from the Fab fragments of an immunoglobulin that targets the glycoprotein IIb/IIIa receptor on the platelet membrane.^[2]

1 Indications for use

Abciximab is indicated for use in individuals undergoing percutaneous coronary intervention (angioplasty with or without stent placement). The use of abciximab in this setting is associated with a decreased incidence of ischemic complications due to the procedure^[3] and a decreased need for repeated coronary artery revascularization in the first month following the procedure.^[4] Research also shows that this drug can be of use for patients with diabetes and chronic renal insufficiency. It is not the appropriate drug of choice if a patient is scheduled for an emergency surgery (i.e., heart surgery) because bleeding time may take about 12 hours to normalize.

2 Pharmacokinetics

Abciximab has a plasma half-life of about ten minutes, with a second phase half-life of about 30 minutes. However, its effects on platelet function can be seen for up to 48 hours after the infusion has been terminated, and low levels of glycoprotein IIb/IIIa receptor blockade are present for up to 15 days after the infusion is terminated. Abciximab does not require renal dose adjustment.^[5]

3 Side-effects

Many of the side effects of abciximab are due to its anti-platelet effects. This includes an increased risk of bleeding. The most common type of bleeding due to abciximab is gastrointestinal hemorrhage.

Thrombocytopenia is a rare but known serious risk. Abciximab-induced thrombocytopenia can typically be treated with transfusion of platelets. Abciximab induced thrombocytopenia is usually rapid occurring hours after administration but may occur up to 16 days later.^[6] Transfusing platelets is the only known treatment and may have limited effectiveness as the drug may also bind to the new platelets. Platelet counts, which should average 150,000-400,000, can effectively drop to zero.

4 References

- [1] "Abciximab". *Drugs.com*. Archived from the original on 20 April 2010. Retrieved 13 March 2010.
- [2] "International Nonproprietary Names for Pharmaceutical Substances" (PDF). *WHO Drug Information*. 7 (4). 1993.
- [3] "Use of a monoclonal antibody directed against the platelet glycoprotein IIb/IIIa receptor in high-risk coronary angioplasty. The EPIC Investigation.". *The New England Journal of Medicine*. 330 (14): 956–61. 1994. doi:10.1056/NEJM199404073301402. PMID 8121459.
- [4] Tcheng, J. E.; Kandzari, D. E.; Grines, C. L.; Cox, D. A.; Effron, M. B.; Garcia, E.; Griffin, J. J.; Guagliumi, G.; Stuckey, T.; Turco, M.; Fahy, M.; Lansky, A. J.; Mehran, R.; Stone, G. W.; Cadillac, I. (2003). "Benefits and Risks of Abciximab Use in Primary Angioplasty for Acute Myocardial Infarction: The Controlled Abciximab and Device Investigation to Lower Late Angioplasty Complications (CADILLAC) Trial". *Circulation*. 108 (11): 1316–1323. doi:10.1161/01.CIR.0000087601.45803.86. PMID 12939213.
- [5] Usta C, Turgut NT, Bedel A (2016) How abciximab might be clinically useful. *Int J Cardiol* doi:10.1016/j.ijcard.2016.07.213 PMID 27519521
- [6] Profound delayed thrombocytopenia presenting 16 days after Abciximab (Reopro®) administration. *Platelets*. 2011;22(4):302-4. doi: 10.3109/09537104.2010.518324.

5 External links

- Official website

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