Abciximab and Tirofiban (GP IIb/IIIa Inhibitors)

Abciximab, tirofiban, and eptifibatide are glycoprotein IIb/IIIa receptor inhibitors that work by inhibiting platelet glycoprotein IIb/IIIa receptors, preventing the binding of fibrinogen. Ultimately, by preventing binding of fibrinogen, these medications prevent aggregation of platelets, thereby preventing clot formation. The inhibition of platelet aggregation caused by GP IIb/IIIa receptor inhibitors can be reversed by stopping the medication, unlike medications such as aspirin and ticlopidine, which cause irreversible inhibition of platelet aggregation. Though expensive, GP IIb/IIIa receptor inhibitors are used to prevent thrombotic events in patients after a percutaneous coronary intervention (PCI), or in those with acute coronary syndrome (ACS). The major side effect associated with these medications is bleeding, especially gastrointestinal hemorrhage. These medications are often administered to patients in combination with other medications such as heparin and aspirin.



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Mechanism

IIb/IIIa Receptor Inhibitors

(2) Tutu Bee and (3) Tree Apples with Inhibiting-chains

Abciximab, tirofiban, and eptifibatide work by inhibiting platelet glycoprotein IIb/IIIa receptors, which then prevents binding of fibrinogen. Ultimately, by preventing binding of fibrinogen, these medications prevent aggregation of platelets, thereby preventing clot formation.

Inhibits Platelet Aggregation

Plates with Inhibiting-chains

GP IIb/IIIa receptor inhibitors (abciximab, tirofiban, and eptifibatide) inhibit platelet aggregation. Abciximab causes irreversible inhibition while tirofiban and eptifibatide may be reversed by stopping the medication or dialyzing the patient.

Indications

Thrombotic Event Prevention

Trombone Event Prevented

GP IIb/IIIa receptor inhibitors are used for short-term prevention of thrombotic events in patients with acute coronary syndrome.

Acute Coronary Syndrome (ACS)

Acute-angle Heart

Patients with acute coronary syndrome experience a disruption of arterial plaque causing complications such as unstable angina, and myocardial infarction. Treatment with GP IIb/IIIa receptor inhibitors, in addition to heparin and aspirin, decreases the likelihood that the patient will experience a thrombotic event due to the disruption of plaque.

Percutaneous Coronary Intervention (PCI)

Heart with Coronary Stent

When patients undergo a procedure involving a percutaneous coronary intervention (PCI), the wall of the artery is damaged, increasing the risk of platelet aggregation and blood clot formation.

Side Effects

Bleeding

Bleeding

The major side effect associated with GP IIb/IIIa receptor inhibitors is bleeding, especially gastrointestinal hemorrhage. If bleeding or hemorrhage occurs, the infusion should be stopped immediately.

Considerations

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Expensive

Expensive gifts

The cost of GP IIb/IIIa inhibitor therapy is expensive, often costing upwards of $1,000 for one course of treatment.

Combination Drug Therapy

Combination of Med-bottles

GP IIb/IIIa inhibitors are often administered to patients in combination with other medications, such as heparin and aspirin.

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