

Prostacyclin Analogs

Prostacyclins are a type of eicosanoid that play a role in inflammatory pathways. Prostacyclin, also known as PGI₂, is derived from prostaglandin H₂ and used to make synthetic analogs to treat disease. Prostacyclin analogs work by vasodilating pulmonary and systemic arteries as well as inhibiting platelet aggregation. They are indicated in the treatment of pulmonary hypertension. Side effects include flushing and jaw pain. Examples of these medications are epoprostenol, iloprost, and treprostinil.



PLAY PICMONIC

Mechanism of Action

Prostaglandin I₂ (Prostacyclin)

[P-rasta Eye-\(2\)-tutu](#)

After cyclooxygenase (COX) enzymes act to convert arachidonic acid to prostaglandin H₂, prostacyclin synthase converts PGH₂ into PGI₂ also known as prostacyclin. Several other eicosanoids are formed from PGH₂.

Vasodilation of Pulmonary and Systemic Arteries

[Vase-dyed with Artery-O's Lungs and Sound-system](#)

Prostacyclin analogs work by vasodilating arteries in the lungs and the body. This is why they are effective in treating pulmonary hypertension.

Inhibits Platelet Aggregation

[Plates with Inhibiting-Chains](#)

Prostacyclin analogs have antithrombotic properties that work to balance the actions of prothrombotic thromboxane A₂ molecules. Patients may need to monitor for coagulation labs when taking this medication.

Indications

Pulmonary Hypertension

[Lungs Hiker-BP](#)

Prostacyclin analogs are indicated for patients with pulmonary hypertension. They help to relax pulmonary vasculature and keep pressures down.

Side effects

Flushing

[Flashlight](#)

Side effects of prostacyclin analogs include flushing from capillary vasodilation.

Jaw Pain

[JAWS-shark Jaw Pain-bolts](#)

Another side effect from taking prostacyclin analogs is jaw pain.

Drugs

Epoprostenol

[E-pick-P-rasta](#)

Epoprostenol has a short half-life of 2–3 minutes. It can be continuously administered via central venous catheter or a peripherally inserted central catheter (PICC).

Iloprost

Eye-glow-P-rasta

Iloprost has a half-life of 20–25 min and requires six to nine treatments per day. Giving iloprost requires a specially designed adaptive aerosol delivery device which matches the patient's individual breathing pattern.

Treprostinil

Tree-P-rasta

Treprostinil can also be administered continuously via intravenous access. It has a half-life of 4 hours.