Neuro.Wiki

ANTIPLATELET THERAPY

Agents at a glance · mechanisms · dosing · precautions

teal = agent · red = caution / interacting drug / contraindicated · green = reversible / preferred

Agent	Mechanism	Onset · Reversibility	Typical dosing	Precautions
Aspirin COX-1 inhibitor	Irreversibly acetylates **COX-1** → ↓ thromboxane A_2.	Onset <1 h (chewed). **Irreversible** (~7–10 d).	Acute stroke **81–300 mg**; then **81 mg** daily.	GI bleeding (dose-related); NSAIDs blunt its effect — **take ASA first** (see table below).
Clopidogrel (Plavix) P2Y12 — prodrug	Irreversible **P2Y12**; **prodrug** — needs **CYP2C19** activation.	Onset 2–6 h. **Irreversible** (~5–7 d).	Load **300–600 mg**; then **75 mg** daily.	**Avoid if** CYP2C19 slow metabolizer **or** P2Y12 test **>180 PRU** (test 8 h after loading, or day 7 if no load). **Avoid CYP inhibitors**[1]**.**
Ticagrelor (Brilinta) P2Y12 — direct	Reversible, **direct-acting** P2Y12 (not a prodrug).	Onset 0.5–2 h. **Reversible** (~3–5 d, BID).	Load **180 mg**; then **90 mg BID**.	**Avoid CYP3A drugs**[2]**.** Caution: digoxin, opioids, simvastatin / lovastatin. Dyspnea common.
Prasugrel (Effient) P2Y12 — prodrug	Irreversible P2Y12; faster/more reliable than clopidogrel.	Onset ~0.5 h. **Irreversible** (~7–10 d).	Load 60 mg; then 10 mg daily (cardiology).	**CONTRAINDICATED with prior stroke / TIA** — excess intracranial hemorrhage.
Dipyridamole + ASA (Aggrenox) PDE / adenosine	Dipyridamole inhibits PDE & adenosine reuptake → ↑ cAMP; + aspirin.	Onset hours. Aspirin component irreversible.	ASA 25 mg / ER-dipyridamole 200 mg **BID**.	**Headache** (common, limits tolerability); caution in CAD.
Cilostazol PDE3 inhibitor	Inhibits **PDE3** → ↑ cAMP; antiplatelet + vasodilator.	Onset hours. Reversible.	100 mg BID.	**Contraindicated in heart failure.** Avoid in acute coronary syndromes. Caution with CYP3A4 & CYP2C19 inhibitors.
IV agents cangrelor · GP IIb/IIIa	Cangrelor = IV reversible P2Y12. Abciximab / eptifibatide / tirofiban = GP IIb/IIIa blockers.	Onset minutes. **Rapid on/off**.	Weight-based IV infusion.	Peri-procedural in neuro-intervention (stenting, thrombectomy rescue). Bridging when oral route unavailable.
Vorapaxar (Zontivity) PAR-1 antagonist	Blocks thrombin receptor **PAR-1** on platelets.	Very long-acting. **Effectively irreversible**.	2.08 mg daily (add-on).	**CONTRAINDICATED with prior stroke / TIA / ICH** — intracranial bleeding.

1 CYP inhibitors (avoid with clopidogrel): omeprazole, esomeprazole, fluconazole, voriconazole, fluoxetine, fluvoxamine.

2 CYP3A drugs (avoid with ticagrelor): ketoconazole, clarithromycin, rifampin, phenytoin, phenobarbital.

⚠ Key Interactions — Medications to Avoid

Combination	Why it matters	What to do
Aspirin + **ibuprofen / NSAIDs**	Blunts aspirin's antiplatelet effect & ↑ GI bleeding.	Take aspirin first; prefer acetaminophen.
Clopidogrel + **omeprazole (or esomeprazole)**	↓ clopidogrel efficacy (CYP2C19 inhibition).	Use pantoprazole.
Clopidogrel + **CYP2C19 loss-of-function**	Poor activation → ↓ efficacy.	Prefer ticagrelor.
Ticagrelor + **CYP3A4 inducers** (carbamazepine, phenytoin, phenobarbital)	↓ ticagrelor efficacy.	Use a non-enzyme-inducing AED.
Ticagrelor + **strong CYP3A4 inhibitors** (clarithromycin, ketoconazole)	↑ ticagrelor levels → ↑ bleeding.	Avoid; switch antibiotic / antifungal.
Prasugrel or **Vorapaxar** + **prior stroke / TIA**	Markedly ↑ intracranial hemorrhage.	**Contraindicated** — use clopidogrel, ticagrelor, or ASA.
Any antiplatelet + **SSRIs / SNRIs**	Additive bleeding risk (esp. GI).	Weigh need; consider GI protection; counsel on bleeding.
Dual therapy (antiplatelet + **anticoagulant**)	Markedly ↑ risk of bleeding.	Minimize duration; avoid long-term use.