

Prescribing Protocol – SESLHDPR/673
Ticagrelor for neuroendovascular
stent procedures



Prescribing Protocol	
Title	Ticagrelor – Prevention of thrombotic complications post neurointerventional stenting procedures.
Areas where Protocol/Guideline applicable e.g. District, Hospital, ITU, Ward	POWH - Neurointervention Department
Areas where Protocol/Guideline not applicable	Other Clinical Services
Authorised Prescribers	Neurointerventionists or Medical Officers under their direct supervision
Indication for use	Prevention of thrombotic complications post neurointerventional stenting procedures.
Clinical condition	Patients with carotid artery tandem lesion where endovascular clot retrieval and insertion of a neuroendovascular stent is required.
Contra-indications	<ul style="list-style-type: none"> • Active bleeding or disease states with increased risk of severe bleeding • History of intracranial bleed • Hypersensitivity to ticagrelor or any of the excipients • Moderate to severe hepatic impairment. • Co-administration of ticagrelor with strong CYP3A4 inhibitors (ticagrelor concentration may be increased, increasing the risk of bleeding).
Precautions	<ul style="list-style-type: none"> • Patients at risk of bradycardia (ticagrelor may cause asymptomatic ventricular pauses) • Asthma, COPD—ticagrelor may cause dyspnoea • Weight <60 kg—increases risk of bleeding. • Hyperuricaemia—ticagrelor may increase uric acid concentration. • Asian ethnicity—may be at increased risk of bleeding • Pregnancy and breast-feeding – limited human data
Place in Therapy	First line
If part of combination therapy, list other drugs	Used in combination with low-dose oral aspirin (75-100mg daily) In emergency treatment, IV aspirin and IV tirofiban are used initially for immediate antiplatelet effect
Dosage (Include dosage adjustment for specific patient groups)	90mg orally twice a day A loading dose of 180mg may be used for the initial dose in emergency settings if the oral route is available (in place of IV tirofiban).
Duration of therapy	Up to 6 months in combination with aspirin. In planned procedures, antiplatelet treatment starts 7 days prior to procedure.

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<p>Important Drug Interactions</p>	<p>Ticagrelor is a cytochrome P450 3A4 substrate and mild inhibitor of CYP3A4.</p> <ul style="list-style-type: none"> • Strong CYP3A4 inhibitors are contraindicated and include ketoconazole, clarithromycin, nefazadone, ritonavir and atazanavir. • Moderate CYP3A4 inhibitors may increase exposure to ticagrelor and include diltiazem, amprenavir, aprepitant, erythromycin, fluconazole and verapamil. • CYP3A4 inducers reduce efficacy of ticagrelor and include rifampicin, dexamethasone, phenytoin, carbamazepine and phenobarbitone. • Concentrations of simvastatin, atorvastatin, digoxin and cyclosporin are increased by ticagrelor. Monitor cautiously for toxicity. <p>Anticoagulants - combination increases risk of bleeding Avoid grapefruit juice as it may increase the risk of bleeding</p>
<p>Administration instructions</p>	<p>Loading doses (if required): for rapid onset of action use oro-dispersible tablets (2 x 90mg).</p> <p>Maintenance dosing: Film-coated tablets should be used for ongoing dosing and at discharge. Oro-dispersible tablets may be used for patients with swallowing difficulties.</p> <p>Oro-dispersible tablets should be placed on the tongue and allowed to dissolve and can be administered with or without water.</p> <p>Film-coated tablets should be swallowed whole.</p>
<p>Monitoring requirements</p> <p>Safety:</p>	<ul style="list-style-type: none"> • Renal function 1 month after starting treatment and when clinically indicated, especially in elderly people and those with pre-existing renal impairment • Platelet count, haemoglobin, haematocrit and signs of bleeding. • Respiratory symptoms - Dyspnoea is not usually severe, occurs in the first few weeks of treatment and, although it sometimes leads to discontinuation, it does not appear to be associated with worsening respiratory or cardiac disease
<p>Effectiveness:</p>	<p>Rate of stent patency (effectiveness) Rate of stent thrombosis (treatment failure)</p>
<p>Management of complications</p>	<p>Management of acute bleeding and stent restenosis as indicated</p>
<p>Basis of Protocol/Guideline (including sources of evidence, references)</p>	<p>Australian Medicines Handbook, Ticagrelor, last updated July 2020 Kim, KS et al. (2018). Management of antiplatelet therapy in patients undergoing neuroendovascular procedures. J Neurosurg 129:890-905</p>
<p>Groups consulted in development of this protocol</p>	<p>SESLHD Neurointerventionists Senior Pharmacist – POWH Stroke/ICU</p>

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GOVERNANCE	
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Chairperson, QUM Committee	Dr John Shephard
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