Cangrelor

Emergent stenting of both extra- and intracranial occlusions during acute ischemic stroke procedures is complicated by the need for immediate platelet inhibition to prevent thromboembolic complications.

Cangrelor is a new antiplatelet therapy with a P2Y12 inhibiting effect, with a rapid onset and offset of action, owing to its short half-life [1].

Cangrelor may be a feasible alternative for patients requiring immediate intervention with the use of endoluminal devices. It allows the possibility for a secure transition to long-term ticagrelor and progression to surgery in the setting of unexpected complications [2].

Cangrelor presents many advantages compared to standard therapy in patients undergoing stent placement related to its pharmacokinetic profile, rapid onset of action, ease of transition to oral P2Y12 antiplatelet agents, and measurability [3]

Findings suggest that cangrelor is a promising alternative in acute stenting for the treatment of cerebrovascular pathology. However, further studies with larger samples are required to accurately elucidate its safety and effectiveness in neuroendovascular procedures [4].

Case series

5 patients who received cangrelor for >1 month in a neurosurgical intensive care unit due to a very high likelihood of requiring emergency revision surgery. Despite multiple therapeutic interruptions for surgical procedures, no hemorrhagic events occurred, and there was only one transient ischemic event, which occurred during the transition from cangrelor to ticagrelor. Cangrelor can be a therapeutic option for patients with a high likelihood of requiring revision neurosurgery after intracranial stenting [5].

Five prior case series have been published evaluating the results of IV cangrelor in

neurointerventional procedures. Paul et al. sought to combine the data from all prior studies and analyze only ischemic stroke interventions.

A prospectively maintained database was reviewed to identify all cases of IV cangrelor administration during acute ischemic stroke intervention. Nine additional patients were identified who have not been previously published. In addition, a literature search was performed to identify five prior publications of cangrelor in neurointervention. The data from these was combined with our institution in a pooled-analysis.

Overall, 129 patients who received IV cangrelor during an acute ischemic stroke intervention were identified. The asymptomatic intracranial hemorrhage rate was 12.6%(11/87). The symptomatic intracranial hemorrhage rate was 6.2% (8/129). The rate of retroperitoneal hematoma and gastrointestinal bleeding were also low (1.5% and 0.8%, 2/129 and 1/129). There was one case of intraprocedural thromboembolic complication (0.8%) and no cases of intraprocedural in-stent thrombosis(0%).

IV cangrelor during Endovascular treatment for acute ischemic stroke appears to be safe, with a symptomatic intracranial hemorrhage rate of 6.2%. More research is needed to determine the ideal dosing regimen [6].

Case reports

The recommended duration of dual antiplatelet therapy after drug-eluting stent placement presents a dilemma for patients with recent stenting who require urgent or emergency noncardiac surgery. We present the case of a patient with recent drug-eluting stent placement (<6 months) on dual antiplatelet therapy who underwent successful emergency cervical spine surgery with antiplatelet therapy bridged using cangrelor, an intravenous P2Y12 inhibitor antiplatelet agent. Our experience illustrates the multidisciplinary approach to a patient with high thrombotic and bleeding risk who underwent neurosurgery off both aspirin and a P2Y12 inhibitor [7]

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