VerifyNow™

Clinical and economic impact of platelet function testing in neurointervention

Balancing procedure-related and therapeutic risks in neurointervention

Flow diversion—the preferred treatment modality for many intracranial aneurysms—has risks[1]

- Thromboembolic complications occurred in 9.2% of procedures[2]
- Intracranial hemorrhage occurred in up to 6.2% of patients[3]

Dual antiplatelet therapy (DAPT) (e.g., aspirin, clopidogrel) is used more than 90% of the time before intracranial stent placement[4]

- While DAPT reduces the risk of thromboembolic complications, major hemorrhagic complications have been reported in 11.1% of patients[5–7]

Individual response to clopidogrel varies[8]

- Up to 50% of patients demonstrate variable response to clopidogrel[9]
- In a flow diversion multicenter study, 28.8% of patients were identified as clopidogrel nonresponders[2]

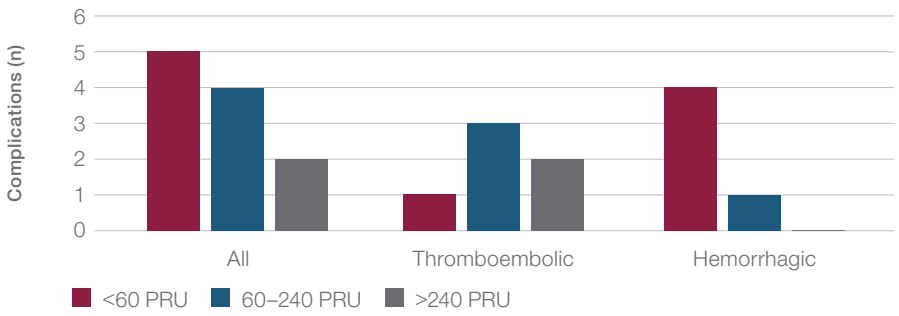
↑ **60%** risk — **Clopidogrel hypo-responders** have a **60% higher risk** of **thrombosis**.[10]

↑ **11%** risk — **Clopidogrel hyper-responders** have an **11% higher risk** of **hemorrhage**.[10]

Predicting patient bleeding and thromboembolic risk[6]

VerifyNow results have been demonstrated to be a predictor of periprocedural hemorrhagic and thromboembolic complications in patients undergoing flow diversion.[9,11]

Post-Neurointervention Complications by VerifyNow Results[11]



Of 48 flow diversion procedures performed on 44 patients, **11 complications** occurred post-procedure (22.9%).

5 hemorrhagic complications occurred, and in 4 of them, **pre-procedural results were <60 PRU**.

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Several publications have reviewed treatment algorithms for P2Y12 inhibitor management in the setting of flow diversion

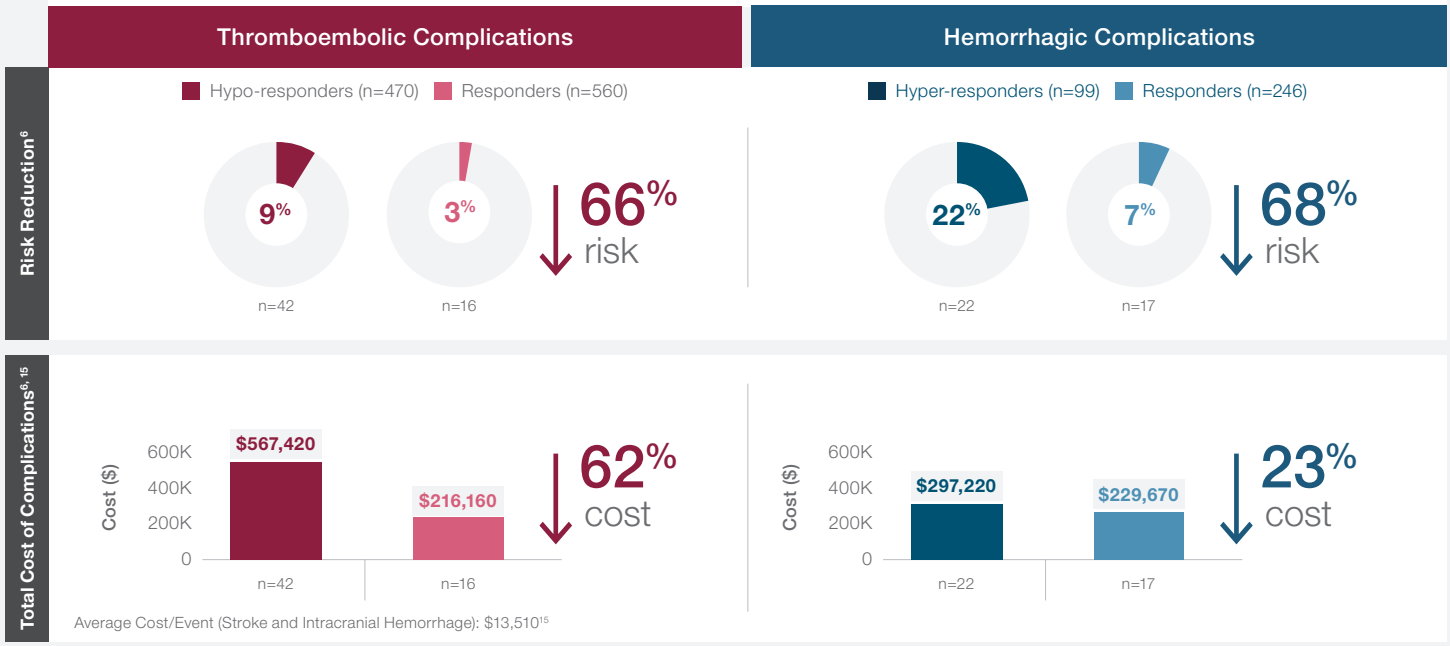
- An example algorithm using a target range of 60–240 PRU resulted in identification of clopidogrel hyper-responders, which required dose adjustment in 71% of patients[11–13]
- Another study using a result of >208 PRU to indicate clopidogrel nonresponders resulted in less thromboembolic complications when a dose adjustment was made (9.8% vs. 51.9%)[2]

"Platelet function tests, particularly point-of-care tests like VerifyNow, have been increasingly adopted to assess patient responses, anticipate complications, and better manage these patients perioperatively."[14]

Predicting patient thromboembolic and bleeding risks with VerifyNow testing demonstrated reduced risk[6]

A meta-analysis, which included 15 studies, evaluated the usefulness of a VerifyNow result as a tool to predict periprocedural complications. Three categories of patient cohorts were defined: hypo-responders (>240 PRU), responders and hyper-responders (<175 PRU).

Using the meta-analysis data, a simulation model utilizing estimates (US$) was built to calculate complication risk and cost reduction.[15]



Average Cost/Event (Stroke and Intracranial Hemorrhage): $13,510[15]

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