

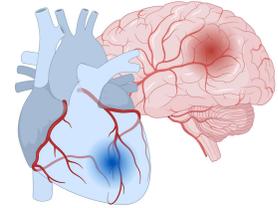
FAST FACTS: CLOPIDOGREL RESISTANCE TESTING



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UNDERSTANDING CLOPIDOGREL RESISTANCE

Clopidogrel is a cornerstone antiplatelet therapy used to prevent thrombotic events in patients with coronary artery disease, peripheral arterial disease and cerebrovascular disease. However, variability in patient response, primarily due to genetic factors or drug interactions, can lead to treatment failures and adverse outcomes.



WHY TEST FOR CLOPIDOGREL RESISTANCE?

Testing for clopidogrel resistance helps identify patients who are less likely to benefit from clopidogrel therapy and may need alternative antiplatelet treatment. Indications for testing include:

- Patients with a history of recurrent thrombotic events despite clopidogrel therapy
- Prior to initiating therapy in high-risk patients (e.g. those undergoing percutaneous coronary intervention)
- Evaluation of drug-drug interactions that may influence clopidogrel effectiveness

CLINICAL VALUE OF RESISTANCE TESTING

- Reduces the risk of recurrent thrombotic events
- Optimises antiplatelet therapy, potentially improving patient outcomes
- Enhances personalised medicine approaches



TESTING METHODS	
<p>CYP2C19 Genotyping</p>  <p>Indications: Best utilised before starting clopidogrel therapy, especially in patients planned for PCI or those with high cardiovascular risk.</p> <p>Method: Detects genetic variations in the CYP2C19 gene that influence clopidogrel metabolism (e.g. carriers of CYP2C19*2 or *3 alleles). Poor metabolisers and intermediate metabolisers may have reduced antiplatelet response.</p> <p>Benefits: Allows for upfront, proactive adjustment of antiplatelet strategy.</p> <p>Limitations: Does not account for non-genetic factors affecting clopidogrel response.</p>	<p>Platelet aggregometry</p>  <p>Indications: Recommended for patients who are on clopidogrel and have experienced a recurrent thrombotic event; also used to evaluate the real-time effectiveness of clopidogrel.</p> <p>Method: Measures platelet aggregation in response to ADP; low responsiveness indicates resistance and may warrant therapy modification.</p> <p>Benefits: Assesses the cumulative effect of both genetic and non-genetic factors on platelet function.</p> <p>Limitations: More complex and time-consuming than genotyping; requires active clopidogrel administration for accurate assessment.</p>

CLOPIDOGREL RESISTANCE TESTING AVAILABLE AT AMPATH

	Mnemonic	Turnaround time	Special requirements
CYP2C19 Genotyping	CLOPIGEN	4 days	None (EDTA blood/buccal swab)
Platelet aggregometry	ADP	24 hours	Sample (citrate tube) must reach the lab within 4-6 hours from collection

CONCLUSION

Integrating clopidogrel resistance testing into clinical practice offers a significant opportunity to tailor antiplatelet therapy based on individual patient profiles, thereby enhancing treatment efficacy and safety.