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IMPLEMENTING CYP2C19 POINT-OF-CARE TESTING TO OPTIMISE CLOPIDOGREL USE AFTER STROKE

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Background and aims: Clopidogrel is a commonly used antiplatelet medication recommended for secondary prevention of ischaemic stroke and Transient ischaemic attack (TIA). As it is a prodrug, it requires hepatic biotransformation by CYP2C19. Approximately 27-57 % of the population have reduced CYP2C19 activity making clopidogrel less effective for secondary prevention. As such, NICE now recommends CYP2C19 genotype testing to assess if clopidogrel is suitable in patients with recent stroke or TIA. We present the experience of implementing point of care (POC) CYP2C19 genetic testing at an NHS Hyperacute Stroke Unit (HASU).
Methods: Testing was introduced at the Stroke front door over 12 hours 7 days/week for patients presenting with suspected stroke or TIA by training a cohort of six stroke assessment nurses and five HCAs. Scaling up to include patients presenting outside these hours and inpatients was achieved by sequentially training HASU nurses and HCAs. Analysis was performed on 586 patients tested between 17th March and 25th July 2025.
Results: The POC system showed good reliability with test failure rate 0.17%. Time for test completion was 64-76 minutes. Approximately, one-third of the patients (32.5%) were clopidogrel non-responders including (28.5%) with recurrent stroke. Crucially, in most of the clopidogrel non-responders (83.7%) an immediate genetically guided antiplatelet therapy was prescribed. The proportion of tests undertaken where antiplatelet prescription was not indicated was low (11.2%).
Conclusions: Implementation of POC testing was feasible, scalable and effective in providing immediate availability of results. It has the potential to reduce recurrent ischaemic events by ensuring tailored and personalised antiplatelet prescription in acute settings.
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