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Characterisation of variation in the CYP2C19 gene in African populations

Booyse, Ross Peter

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Abstract for journal submission

Background: *CYP2C19* pharmacogenetic testing is important clinically to optimise patient response to clopidogrel and anti-depressants. This study aimed to characterise the distribution of *CYP2C19* star alleles (haplotypes) across diverse African populations compared with global populations, with a view towards informing future pharmacogenetic implementations. **Methods:** *CYP2C19* star alleles and diplotypes were called from 604 high coverage genomes from continental African populations using the StellarPGx pipeline. **Results:** From our analysis, *CYP2C19*1* (51%), **2* (17%), and **17* (22%) were the most common star alleles across African populations in this study. We also identified 3% of African participants that had potentially novel *CYP2C19* haplotypes. Over 70% of the SSA participants had either poor, intermediate, rapid, and ultrarapid metabolizer status, and would likely benefit from dosage and/or treatment alterations, especially for clopidogrel **Conclusion:** This study supports the necessity for *CYP2C19* pharmacogenetic testing in African clinical settings and the importance of comprehensive star allele characterisation in the African context.