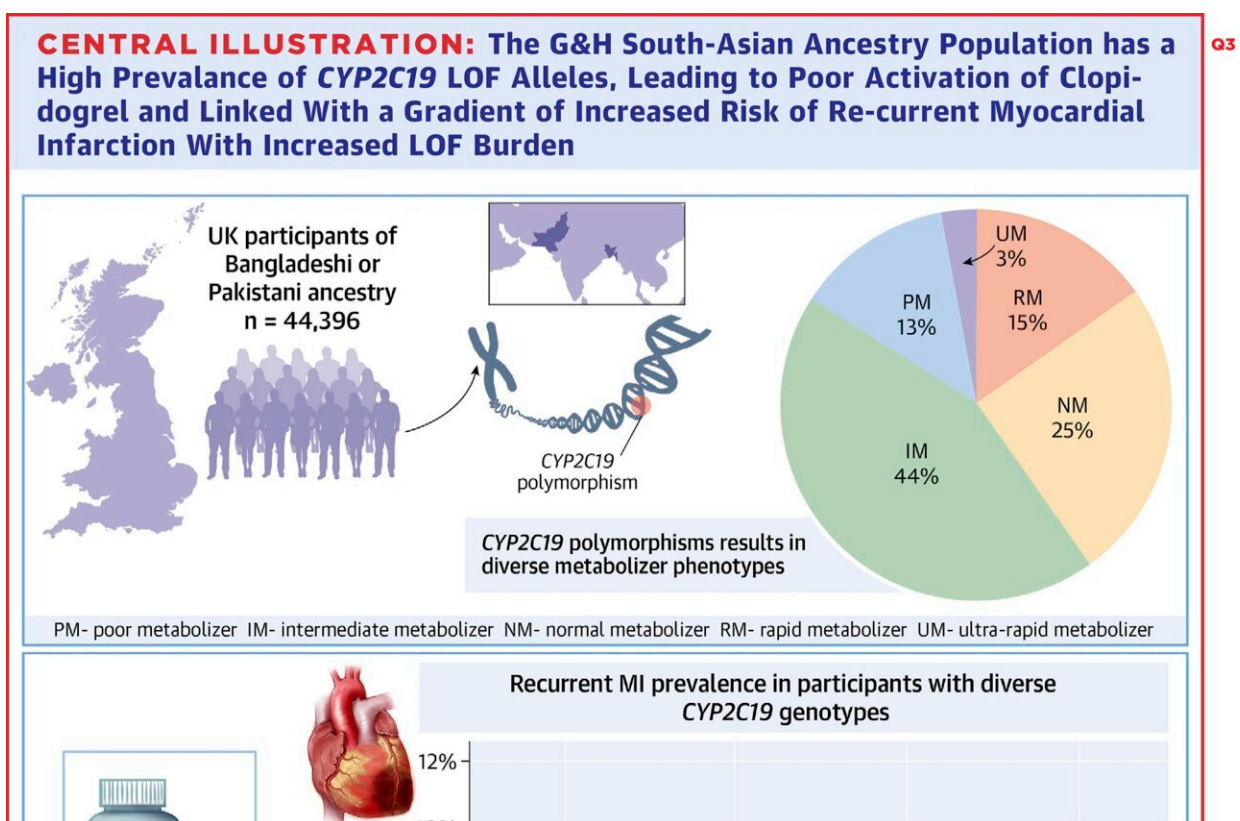


Study shows that common medication used to prevent heart attacks may be ineffective for majority of British South Asians

August 21 2023



Graphical abstract. Credit: *JACC: Advances* (2023). DOI: 10.1016/j.jacadv.2023.100573

Clopidogrel is a commonly prescribed medication used to prevent

further heart attacks after an initial event. It needs to be activated in the body to be effective. Studies of European populations show that 30% of individuals have genetic variants that reduce or prevent activation through the production of an enzyme called CYP2C19.

People of South Asian ancestry have high rates of cardiovascular disease, but previous studies have not looked for these variants in UK South Asian populations or linked these variants with risk of recurrent heart attacks if prescribed clopidogrel in South Asian ancestry populations.

The researchers examined the [health data](#) of 44,396 British people of Bangladeshi and Pakistani ancestry participants from the Genes & Health cohort, who gave consent to link their [genetic data](#) with their long-term health records. They found that 57% of participants have the common genetic change that means they cannot activate clopidogrel. More than 2 in 3 British South Asians in the Genes & Health cohort who have had a heart attack received clopidogrel.

Using the participants' long-term health data, the research team was able to show that people with two loss of function CYP2C19 variants were more than three times more likely to have recurrent heart attacks, which may relate to clopidogrel treatment failure.

Dr. Emma Magavern, lead author and clinical doctor and researcher at Queen Mary University of London, said, "Clopidogrel has been shown to prevent heart attacks mainly in people of European ancestry. For the first time we show that genetic variants that render clopidogrel ineffective are present at much higher rates (57%) in British people of Bangladeshi and Pakistani ancestry and are linked with higher risk of having another heart attack in people prescribed clopidogrel."

"This study highlights the importance of using genetics to determine who

can benefit from clopidogrel after a [heart attack](#), and how not doing so is likely to disproportionately disadvantage specific groups, such as South Asians."

"British peoples of South Asian ancestry suffer from high rates of cardiovascular disease and therefore have both a high risk of needing an antiplatelet medication and a high risk of treatment failure with [clopidogrel](#). This study also illustrates how systemic under-representation South Asians in therapeutics trials has obscured the intersection of risks impacting this community."

Fiona Miller Smith, Chief Executive of Barts Charity who are one of the research funders, said, "At Barts Charity we are committed to funding [health research](#) that leads to better health care for all in our diverse East London population. With high rates of cardiovascular disease in the East London South Asian community, we are therefore pleased to see the outcomes of this important study which will lead to more effective treatment for this group."

The paper is published in the journal *JACC: Advances*.

More information: Emma F. Magavern et al, CYP2C19 Genotype Prevalence and Association With Recurrent Myocardial Infarction in British–South Asians Treated With Clopidogrel, *JACC: Advances* (2023). [DOI: 10.1016/j.jacadv.2023.100573](https://doi.org/10.1016/j.jacadv.2023.100573)

Provided by Queen Mary, University of London

Citation: Study shows that common medication used to prevent heart attacks may be ineffective for majority of British South Asians (2023, August 21) retrieved 12 May 2024 from <https://medicalxpress.com/news/2023-08-common-medication-heart-ineffective-majority.html>

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