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THE GENETIC BASIS OF COMPLEX TRAITS IN THE CONTEXT OF HIV TREATMENT

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ABSTRACT

HIV-positive people on long-term treatment are at increased risk for developing several chronic diseases, including cardiovascular disease, metabolic syndrome, renal failure, and liver fibrosis. Studies among PLWH on treatment have shown an increase in the prevalence of diseases with a high heritability in the HIV-negative population, including type 2 diabetes mellitus and cardiovascular disease. Recent months have seen a rise in interest in PRS's potential for widespread use. These scores, which are produced by integrating the additive effects of dozens to thousands of genetic variants inside a person, allow for highly accurate prediction of multiple metabolic, inflammatory, tumoral, and cardiovascular conditions32. Despite recent demonstrations that predictive risk scores (PRS) can be useful to stratify PLWH at high risk of cardiometabolic diseases who may benefit from preventive therapies and that PRS can improve the prediction of chronic kidney disease, they have only recently been studied in the context of HIV-infected people on long-term antiretroviral therapy. It is important to pay attention to diversity and justice in precision medicine techniques, just as you would in any other discipline of genetics, because not all ancestral populations will have the same PRS. Discoveries we've made about the host genome have aided our understanding of HIV biology immensely. First, the significance of T cell responses in vaccine development has been underlined by data that HLA variation has a disproportionately large effect on HIV progression within the setting of the whole genome. Our knowledge of how amino acid diversity in HLA molecules contributes to numerous medically significant features has also been greatly enhanced by our capacity to reliably predict HLA allele types and protein-level variability from genotyping array data.

Keywords: Genetic, Complex Traits, HIV Treatment.