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Test, Treat and Cure

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The HIV/AIDS research field was galvanized with the apparent functional cure of Timothy Brown, the Berlin patient [1]. The potential second case of the Mississippi baby brought additional excitement; however, there---emergence of virus in this infant has given pause to hopes for additional functional cures [2]. At the recent IAS conference on HIV/AIDS, Zaunders and colleagues presented on patient C135, one of the delta nef deleted HIV virus recipients in the Sydney blood bank cohort, who is not on antiretroviral medications and in whom infectious virus cannot now be detected [3]. Whether this person is functionally cured or in remission is unknown. C135 has some genetic biomarkers that are associated with slower disease progression: HLA---B*57 positivity and heterozygosity for the CCR5Delta 32 mutation. As HIV researchers develop strategies for regimens designed towards functional cure, we propose that in HIV infected persons in whom functional cure regimens are being considered, and in whom therapeutic vaccination is a proposed intervention, immunogenomic approaches are taken into account to prioritize initial studies. For example, those with HLA or KIR alleles associated with slow progression, such as HLA---B*57 [4]; Delta 32CCR5 heterozygosity [5]; overexpression of intrinsic resistance genes [6]; and others, could be candidates prioritized for these studies. We call this identification of “remission ready” patients. Oncologists stage patients based on a number of biomarkers for entry into differential clinical practices. HIV health practitioners enrolling subjects into functional cure regimens that include therapeutic immunizations should consider taking immunogenomics into account when identifying remission ready patients.

While the ultimate goal for HIV research is a universal cure and effective vaccine, this Sydney blood bank cohort subject has shown that genetics is a powerful indicator of viral suppression and potential remission. Immunogenomic profiling can help identify other such “remission ready patients”. This strategy could be described as “test” (immunogenomic profiling), “treat” (provide anti---retroviral therapy), and “cure” (augmentative therapies designed for functional cures).

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