OC - (8499) - THE T-CELL VACCINE STRATEGY: GLOBALLY RELEVANT AIDS VACCINE EUROPE-AFRICA TRIALS PARTNERSHIP (GREAT)

Hanke, Tomas (United Kingdom); Fast, Pat (United States of America); Kaleebu, Pontiano (Uganda); Jaoko, Walter (Kenya); Sanders, Eduard (Kenya); Kilembe, William (Zambia); Kuipers, Hester (United States of America); Okech, Brenda (Uganda); Gilmour, Jill (United Kingdom)

1 - University of Oxford; 2 - IAVI; 3 - UVRI; 4 - IAVI-ICR; 5 - KEMRI-Kilifi; 6 - ZEHRP; 7 - UVRI-IAVI; 8 - HIL-IAVI

Background Remarkable progress has been achieved in decreasing AIDS-related deaths and HIV-1 transmission through ART. Nevertheless, an affordable, effective and durable HIV-1 vaccine protection remains the best solution for halting the AIDS epidemic.

The Vaccine Strategy Our aim is to develop a vaccine inducing cytotoxic T lymphocytes (CTL), which effectively inhibit HIV-1 replication and complement bnAbs for prevention; such T cells are likely critical for a successful cure. Central to our strategy is to focus HIV-1-specific CTL on the most functionally conserved regions (not a string of epitopes and not full-length proteins) common to most HIV-1 variants, which HIV-1 typically cannot change without losing fitness. These conserved regions were defined by bioinformatics, and a bivalent mosaic was computationally designed to increase the vaccine perfect match of potential T-cell epitopes to 80% of global HIV-1 variants; if successful, the vaccine will be suitable for global deployment. Furthermore, we maximized the inclusion of protective epitopes associated with viral control in treatment-naive HIV-1-positive individuals defined on 4 continents. These immunogens are delivered by the non-replicating simian adenovirus ChAdOx1 prime and non-replicating poxvirus MVA boost regimen, clinically proven safe and potent.

Methods The GREAT consortium has been established to build capacity for a future efficacy trial in Zambia, around Lake Victoria and in Kenya by engaging populations at documented high risk for HIV-1 infection, despite preventive interventions, by diverse clades. We will conduct a phase I/IIa clinical trial HIV-CORE 006 to assess the safety and immunogenicity of the conserved-region vaccines, in preparation for an efficacy trial in these at-risk populations.

Conclusions The aims of the GREAT consortium are to ensure that at the completion of the program grant, the vaccine regimen will be proven safe and potent, and the sites will be prepared to launch an appropriately designed trial to prove the vaccine efficacy.