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Meeting Abstract

The human HIV vaccine pipeline: an update

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Abstract

The number of candidate vaccines that are designed to elicit T cell responses has markedly increased in the last 24 months. In the HVTN system, over 15 different vaccine prototypes have been evaluated. Unfortunately, several prototypes have been less than optimally immunogenic as measured by γIFN producing T cells, while others have elicited high levels of T-cell responses. This disparity has caused the human trialists to look at whether increased standardization of preclinical testing in non-human primates should precede initiation of human clinical trials. Two separate groups (Vaccine Research Center and Eurovac Foundation) have shown immunogenicity of DNA vaccines, especially for priming a subsequent Ad5 or NYVAC vector boost. Overall, replication defective adenoviruses appear to elicit the most consistent immune responses in humans, eliciting γIFN producing T-cell responses in >75% of recipients at levels that range from 200-500 spot forming cells/10^6 PBMC. Immunogenicity of Ad5 vaccines is influenced by dose, HIV insert and prior immunity of the recipient to Ad5. Efficacy trials are underway to define if the magnitude of current responses with Ad5 or DNA Ad5 vectors is useful for controlling viremia or decreasing acquisition of infection.