

HIV Vaccines: Building on Success

RV144 FOLLOW-UP STUDIES



Pox-Protein Public-Private Partnership (P5) Members

U.S. National Institute of Allergy and Infectious Diseases/Division of AIDS

Bill & Melinda Gates Foundation

HIV Vaccine Trials Network

U.S. Military HIV Research Program

Sanofi Pasteur

Novartis Vaccines and Diagnostics



Major Milestones

2009

RV144 trial results announced

2010

International lab team studied immune responses, a collaboration with more than 25 research institutions

2011

Announced RV144 lab studies that identified immune correlates of risk

Selected novel protein candidates for South African trials

Identified new adjuvants

2012

Begin laboratory assessment of protein candidates for Thai trial

Start small clinical studies in Thailand

2013

Final steps in manufacture of vaccine components

Research trials begin

2014

Start phase I study in South Africa

2015

Efficacy studies slated to begin

In 2009, the RV144 Thai vaccine trial provided the first evidence in humans that a safe and effective preventive HIV vaccine is possible. Although efficacy was 31.2% at the end of the study, there was a higher early effect (60%) at 12 months.

POX-PROTEIN PUBLIC-PRIVATE PARTNERSHIP (P5)

Established in 2010 to build on the RV144 results, the Pox-Protein Public-Private Partnership (P5) seeks to advance and ultimately license HIV pox-protein vaccine candidates that have the potential to achieve a broad public health impact. The P5 has assembled a collaborative team across four continents to accelerate progress towards an effective and durable HIV vaccine.

IMPROVING THE VACCINE REGIMEN

Researchers have discovered important clues about the immune responses that may have played a role in protecting some volunteers in RV144. These data from extensive laboratory studies on correlates of risk of HIV infection have informed clinical trial design planning. In parallel, scientists with the P5 have been developing, analyzing and selecting protein components of the vaccine candidates to use in future studies. They aim to improve and prolong the level of protection by using an extra vaccine boost and better adjuvants (a substance that can enhance the immune response to a vaccine).

A small clinical study, RV305, began in April, 2012 in Thailand to evaluate re-boosting in volunteers who participated in the RV144 study. Another clinical study, RV306, will begin later in 2012 using the RV144 vaccine regimen to compare additional vaccine boosts and gather more immunogenicity data in 460 new volunteers.

FUTURE CLINICAL STUDIES

South Africa. The P5 is planning to conduct an efficacy trial in heterosexual adults that will evaluate a prime-boost vaccine similar to the one used in RV144, incorporating the improvements listed above and adjusted to target the most common subtype of HIV in the region (clade C). Over the last year, researchers have been developing and analyzing potential Env proteins to include in this study and selected two subtype C gp120 proteins derived from HIV-1 strains in the region, which are now being advanced to product development.

Thailand. The P5 is also planning an efficacy trial in a high-risk population of men who have sex with men (MSM) to improve upon the RV144 result and extend its relevance to at-risk populations to achieve the greatest public health impact. The P5 recently began the Env selection process for the protein boost for this trial.

Clinical Research Trials. The P5 has plans to test other pox-protein HIV vaccine candidates in South Africa in “discovery” trials with an adaptive design to gather information on multiple vaccine candidates. They seek to identify potential next-generation prime-boost combinations and allow for flexibility in trial design to accelerate progress.

NEXT STEPS

The P5 has initiated the multi-step development process for these vaccine components, which is complicated and lengthy. Vector and immunogen development activities, production of clinical lots, preclinical studies and safety characterizations must occur before any clinical trials can begin. In addition to these and other product development activities, P5 is working on regulatory planning and access agreements, and will continue to collaborate with government and communities within the host countries.