

Objectives: determine if this prime-boost vaccine strategy 1) prevents infection, 2) alters disease course in vaccinees who become infected, and 3) is safe. Vaccines were designed specifically for the predominant circulating HIVs in Thailand (subtypes E and B). Prime: a recombinant canarypox ALVAC-HIV (vCP1521) with a subtype B gag/pro and gp41, and subtype E gp120 (R5) gene insertions (Aventis Pasteur). Boost: AIDSVAX.gp120 B/E, monomers of gp120 B (X4) + gp120 E (R5) with alum (VaxGen).

Methods: 16,000 HIV-negative adult Thais, screened and enrolled through the health care system of the Ministry of Public Health.

Study design: randomized, placebo-controlled, double-blind phase III trial. Immunization is intramuscular over 6 months with a 3-year follow-up period.

Results: Clinical, laboratory & data system infrastructures have been built, qualified and validated; more than 400 staff trained, counseling and treatment networks strengthened, and communities engaged. HIV prevalence in volunteers assessed in a screening protocol was ~3%. During the initial 3-month phase-in period of the trial, more than 500 volunteers were enrolled.

Conclusions: With focus on a low-incidence, community-based population, the trial size is large, logistics very demanding and community engagement crucial.

XV International AIDS Conference. Bangkok, Thailand. 11-16 July 2004.

PROSPECTIVE ANALYSES OF HIV-1-SPECIFIC PROLIFERATIVE RESPONSES, RECALL ANTIGEN PROLIFERATIVE RESPONSES, AND CLINICAL OUTCOMES IN AN HIV-1-SEROPOSITIVE COHORT

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Background: In cross-sectional studies of chronically infected individuals, lymphoproliferative responses to human immunodeficiency virus (HIV) type 1 p24 Gag antigen have previously been associated with lower virus load. It was not known whether this association would be predictive of better clinical outcome in longitudinal studies.

Methods: In blood samples from 608 HIV-seropositive individuals enrolled in a trial of glycoprotein 160 vaccine therapy over the course of 5-3 years, lymphoproliferative responses to HIV-1 antigens, tetanus toxoid (TT), and mitogens were measured and correlated with clinical outcome and other parameters of progression. Baseline lymphoproliferative responses to antigens and mitogens were used to categorize the cohort into responders or nonresponders.

Results: Although response to recall antigens did not correlate with clinical indices of disease progression, positive baseline lymphoproliferative responses to p24 and TT were associated with lower plasma levels of HIV-1 RNA. Persistently positive lymphoproliferative responses to the antigens also inversely correlated with repeated measurements of virus load, although the significance was lost once the measurements were adjusted for virus load and CD4⁺ cell count at baseline, by use of generalized estimating equation analysis.

Conclusions: These observations suggest that the effect of the association between lymphoproliferative response and virus load is established early during HIV-1 infection and does not increase over time and suggest that antigen-specific lymphoproliferative responses reflect the dynamic state of HIV-1 infection and are inversely associated with virus load.

J Infect Dis. 2004; 189(11): 1988-95

CELL MEDIATED IMMUNITY TO *PLASMODIUM VIVAX* INFECTION: THE PROFILES OF MEMORY T-CELLS ACTIVATION IN MALARIA PATIENTS OF THAILAND

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Immunity induced by *P. vivax* during acute infection may lead to memory T-cells recruitment which will be activated during relapsing period or subsequent infection. This study therefore aims to determine memory T-cells in acute and convalescent *P. vivax* infection. PBMC from 13 patients infected with *P. vivax*, 17 immune villagers lived in endemic area, and 15 healthy adults were separated by gradient centrifugation. Patients were followed up after antimalarial treatment on day 14, 28 and 60. Memory T-cell phenotypes were determined by using three-color flow cytometry. Memory T-cells are recognized by the expression of CD27⁺ in the CD45RO⁺ T-cells population as an early memory T-cells which will differentiate to CD27⁻ when mature. In this study mean percentage of CD4⁺CD45RO⁺CD27⁺ and CD27⁻ T-cells were increased during acute infection (34.13, 17.19%) when compare with those of healthy donors (12.67, 6.13%, P<0.01) and immune villagers (14.04, 9.30%, P≤0.02). In addition, CD27⁺ levels remained high up to day 14 (36.44%) and slightly decreased during day 28 and 60 (24.81 and 22.90%) after antimalarial treatment. However, the CD27⁻ T-cells were continuously decreased from day 14 to 28 and 60 (13.96, 11.82 and 10.68%). The mean percentage of CD8⁺CD45RO⁺CD27⁺ T-cells also showed higher level in acute infection (31.34%) when compared with those of healthy donors (7.01%, P≤0.05) and immune villagers (17.87%, P>0.05). This CD27⁺ phenotype was slightly decreased from day 14 (19.75%) to day 60 (18.96%) until nearly the same level as the immune villagers (17.97%). In conclusion, during acute *P. vivax* infection, both early stage and mature memory T-cells were triggered to yield effector cells. The memory T-cell phenotypes could be expanded by the parasites activation. Upon treatment and clearance of parasites from the circulation, the production of memory T-cells was slowed down. However, memory T-cells of both CD4⁺ and CD8⁺ populations were maintained in the immune villagers living in the endemic area. These suggest that memory T-cells play role in the development of cellmediated immunity against *P. vivax* infection. This work is supported by Royal Golden Jubilee Ph.D. Programme/Thailand Research Fund.

12th International Congress of Immunology and 4th Annual Conference of FOCIS. Montreal, Canada. 18 - 23 July 2004. Poster no. T45.29:123.
