ABSTRACT

Background: The immune system's ability to scavenge and destroy detrimental HIV-1 products has an important effect on virion production and the course of infection. In earlier trials of therapeutic immunisation with envelope protein recombinant gp160 (rgp160) we observed a transient positive effect on CD4-lymphocyte counts. This randomised placebo-controlled study investigated whether our preliminary findings represented a potential for a more benign clinical course.

Methods: 835 HIV-seropositive patients from 20 centres in Sweden, Norway, and Finland with CD4-cell counts above 200/microL were randomly assigned to receive 160 microg rgp160 or placebo (alum adjuvant alone) every 3 months for 3 years after an induction period, as well as optimum available treatment. Analyses were by intention to treat.

Findings: 63 of 416 vaccine-group patients and 61 of 419 placebo-group patients reached a primary clinical endpoint (AIDS-defining event or death); the time to first clinical endpoint did not differ between the groups (p=0.864). Significantly fewer vaccine-group patients than placebo-group patients reached the primary immunological endpoint of a decrease of more than 30% from baseline CD4-cell count (157 vs 189, p=0.03). A higher proportion of the vaccine group had CD4-cell counts higher than baseline at 6 months (167 vs 133, p=0.014). HIV-1-specific T-cell immune reactivity was induced in all vaccine recipients studied. No severe adverse events associated with the vaccine were noted during the study. There were significantly fewer deaths among the vaccine recipients than among the placebo-group patients at 2 years, but not at the end of the study.

Interpretation: Therapeutic immunisations with rgp160 have a modest effect on CD4-cell counts, but this treatment alone did not lead to clinical benefit when given in addition to best clinical practice at the time of the trial. Immunisation in conjunction with antiretroviral therapy was also effective, which strongly suggests that a combination with highly active therapy would improve the total effect.