

CD4 AND CD8 REFERENCE COUNTS IN NORMAL HEALTHY SOUTH-INDIAN ADULTS

Dear editor,

As we know, the CD4 cell count is the best indicator of the immediate state of immunologic competence of the patient with HIV infection and these are one of the most widely used surrogate markers for monitoring disease progression and initiating therapy for HIV infected individuals. Because of drastic cut down in the prices of antiretroviral drugs, the antiretroviral therapy has become more affordable in India. Therefore, it is important to know the baseline CD4 count in normal healthy individuals of that locality, as CD4 counts differ from one locality to other and among different ethnic groups. Estimation of CD4 and CD8 cells continues to be an important marker for the monitoring of HIV infected patients especially in developing countries.^[1]

The gold standard method for detection of CD4 /CD8 count is flow-cytometry. But its high initial investments and reagent costs and need for trained personnel, make it unaffordable to most centres in developing countries. Many alternative methods for estimation of CD4/CD8 counts have been developed.^[2] Previous studies have shown that the immunoenzyme assay results well correlated with those of flow cytometric analysis. The easy availability, low cost, rapid performance, make it a user-friendly test and an efficient alternative to flow cytometry.^[1]

We used the Capcellia CD4 /CD8 whole blood assay for detection of CD4/CD8 T Lymphocytes which is an enzyme immunoassay and provides absolute counts of CD4⁺ and CD8⁺ T cell counts in peripheral blood.

The present study was carried out in the Department of Microbiology, Kasturba Medical College, Manipal. Study period was for 18 months from May 2001 to November 2002. A total of 30 healthy adults of both sexes belonging to 20-25 years of age consisting of medical students and nurses were included in the study. The peripheral CD4⁺/CD8⁺ T-lymphocyte counts were detected in these individuals, using CAPCELLIA CD4/CD8 whole blood assay, according to the standard protocol.^[1]

Exclusion criteria for these individuals were, a) Any minor illness in the past one month b) Any major illness in the past six months c) Individuals who took any vaccination in the past six months d) Pregnant women.

All these healthy individuals were also screened for anti-HIV antibodies by licensed HIV antibody detection kit. Informed consent was obtained from all individuals. Fresh

venous blood (2 mL) was collected between 8 am to 10 am, in a vacutainer with EDTA and the test was performed on the same day. A standard curve corresponding to assay was drawn on each graph. Each curve was plotted from five absorbance values experimentally determined from the assay. The absorbance values were carried over on the calibration curve and T cell concentration (cells/ μ L of blood) was calculated for each sample. Data were subjected to Microsoft-excel for SD and graph. The mean CD4 count was found to be 834.6 ± 222.2 and mean CD8 count was found to be 579.3 ± 195.6 as shown in the Figure.

CD4 counts normally differ from one locality to other, and vary among different ethnic groups.^[3] The mean CD4 count among normal Indians is significantly lower than that in the Western population.^[4] It is important to know the baseline CD4 count to draw a criterion for consideration of therapy and we cannot use Western standards for treatment in Indian patients. About the CD4 count of normal healthy individuals two reports are available from south India. In one study from Vellore, it was observed that the mean CD4 T cell counts in normal healthy individuals were 1048 ± 210 and for CD8 cells were 595 ± 211 . In the second study^[5] from Pune the mean CD4 count of 777 cells/ μ L ($n = 21$) was observed. In the North East study^[6] at Manipur, the absolute CD4 count in normal healthy controls was found to be 848 ± 395 and CD8 T lymphocytes counts were 427 ± 123 . There are also reports of CD4 counts of less than 500 cells/ μ L in normal healthy individuals.^[4] In our study, the mean reference count for CD4 cells was found to be 835 ± 222 and for

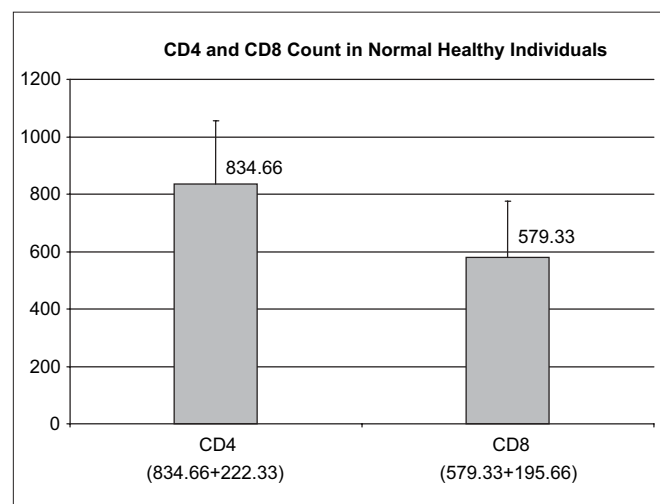


Figure: CD4 and CD8 count in normal healthy individuals

CD8 cells 579 ± 195 , our values are close to the Pune and North-Eastern reports.

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