

**VIROLOGICAL IDENTIFICATION OF THREE SUBGROUPS OF PATIENTS DURING EXTENDED TREATMENT WITH ZIDOVUDINE**

**K. Broadhurst, M. Lowdell, A. Ball, P. Levantis, G. E. Forster, B. T. Goh, B. Colvin, G. G. Jackson, J. S. Oxford** (Academic Virology, Medical Microbiology, London Hospital Medical College, Turner Street, London E 2AD Tel. ++44 71 375 0345 Fax ++44 71 375 2597)

We have performed a detailed virological study from the serial peripheral blood samples of 36 individuals receiving the antiviral drug zidovudine for up to three and a half years. We were unable to isolate the human immunodeficiency virus (HIV) from 6 subjects (Group A). Zidovudine sensitive strains of HIV were isolated from 12 subjects (Group B) and 18 individuals yielded zidovudine resistant virus (Group C). Highest levels of CD4+ cells were seen in Group A. A reduced absolute CD4+ count correlated with isolation of zidovudine sensitive virus (Group B) and a further reduction was observed in patients from whom zidovudine resistant virus was isolated (Group C). The monthly median CD4+ count (cells per cubic millimetre) was plotted against time on AZT for each of the three groups of patients for the first twelve months of treatment. Group A exhibited a marked increase in CD4+ count from 338 at time zero to 486 at three months, during initiation of drug therapy. The CD4+ cell count then stabilised around 400 for the remaining nine months of the study. Cell counts in Group B decreased rapidly from 212 at time zero to 112 at two months and then decline steadily to 69 after eleven months of treatment. In Group C, there was no marked increase or decrease in CD4+ counts at any point during therapy. The counts in this group were consistently lower than those of Group B, where CD4+ counts, for most of the time, remained above 125 during the same period. Whether the decline in CD4+ cell count is caused by the emergence of AZT-resistant HIV-1 or whether it is spurious will require further detailed study with a larger group of patients and a more detailed analysis of the HIV-1 itself in conjunction with the clinical state of the patients. Nevertheless, our study indicates the usefulness of detailed virology and the possible application to clinical management of patients.