Differences in time of virus appearance in the blood and virus-specific immune responses in intravenous and intrarectal primary SIVmac251 infection of rhesus macaques; a pilot study

ABSTRACT

The findings may indicate that the natural mucosal barrier may have a role in slowing down viral transmission. If these findings are valid, larger animal studies could inform future vaccine designs.

INTRODUCTION

Differences in time of infection in the blood and the immune responses in SIVmac251 infection of rhesus macaques have been reported. In this study, the authors report on the time course of infection, the differences in immune responses and the differences in the patterns of infection.

Methods:

The authors used a novel approach to study the time course of infection, the differences in immune responses and the patterns of infection. In this study, they used SIVmac251, a highly sensitive and highly selective antigenic neutralising antibody (ASA) for HIV and hepatitis C virus.

Results:

The authors observed that differences in immune responses were observed in the blood and The acute retroviral syndrome, which is caused by human immunodeficiency virus infection, results in symptoms including fever, pharyngitis, lymphadenopathy, myalgia, skin rash, and headache. Recent research indicates that the HIV-I or SIV virus can penetrate vaginal, rectal, or oral mucosa at high speeds, attaching to and infecting primarily CD4+ T-cells, which then rapidly replicates and spreads to lymphoid tissue and systemic organs. Primary HIV/SIV infection is believed to be contained by virus-specific CTL, while early post-infected patients show evidence of CD8+ CTP in the early weeks after infection, before a neutralizing Ab response is established. Although mucosal transmission is relatively efficient, productive mucousoid dissemination occurs approximately once in 300 or more high-risk exposures. Cell-mediated immunity and direct killing by cytotoxic lymphocytes may be an important factor in containing viral infection at the site of outbreak. The functional differences between mugal T lymphocytes and peripheral T cells are evident. Activated T-cells tend to accumulate at the site of initial activation, while memory T–cell migration occurs continuously and randomly, much like the pattern observed in a sample of naive Tcell mice. This has implications for the immune response during the first phase of an immune system, where Ag-specific memory (TM) cells enter and exit various lymphoid compartments but are initially kept in the same location where antigen was presented by the cell-based therapeutic In humans, it is not feasible to assess the immunological consequences of infection in the mucosal compartments, but with the help of the SIVmac251 macaque model, some of these problems can be resolved. As with human AIDS, SEVMAC251, an immunodeficiency syndrome caused by persistent infection causes significantly slower progression of SAVmac256 replication compared to human counterparts. Our study also demonstrated that macales that express the major histocompatibility class I (Mamu-A*01 mice and other animals) inhibiting S

CONCLUSION

Remarkable conclusions The limited number of animals used in the study indicates that mucosal site exposure delays the appearance of viral organisms in blood. Although the relative percentage of homing markers may not reflect all or most of this variation and may vary depending on the time of analysis, these data suggest that there is a short window to contain viral infection after mucin exposure and that local immunization may be more effective in limiting or stopping viral replication than intrarectal exposure.