

Abstract

Current treatment schemes for severe acute respiratory syndrome (SARS) include broad-spectrum antibiotics, glucocorticoids, and ribavirin. We evaluated the susceptibility of the SARS-related coronavirus (SARS CoV) to ribavirin and interferon (IFN)- alpha in vitro by use of cytopathic effect, plaque assay, and immunoblot analysis. Ribavirin did not inhibit viral growth at concentrations attainable in human serum. In contrast, IFN- alpha showed an in vitro inhibitory effect starting at concentrations of 1000 IU/mL. In conclusion, ribavirin alone is unlikely to be beneficial in the prophylaxis or treatment of SARS CoV infections. Clinical trials with IFN- alpha might be justified to determine a beneficial effect on the outcome of SARS.

To evaluate if systemic murine malarial infection enhances HIV susceptibility through parasite-induced mucosal immune alterations at sites of HIV sexual exposure.

BACKGROUND::

Malaria and HIV have a high degree of geographical overlap, and interact substantially with each other in co-infected individuals. We used a murine model to test the hypothesis that malaria might also enhance HIV susceptibility at sites of HIV sexual exposure.

METHODS::

Female C57/BL6 mice were infected with *P. chabaudi* malaria using a standardized protocol. Blood, gastrointestinal tissues, upper and lower genital tract tissues and iliac lymph nodes were sampled 10 days post-infection, and the expression of putative HIV susceptibility and immune activation markers by T cells was assessed by flow cytometry.

RESULTS::

P. chabaudi malaria increased expression of mucosal homing integrin $\alpha 4\beta 7$ on blood CD4+ and CD8+ T cells, and these $\alpha 4\beta 7$ + T cells had significantly increased co-expression of both CCR5 and CD38. In addition, malaria increased expression of the HIV co-receptor CCR5 on CD4+ T cells from the genital tract and gut mucosa, plus mucosal T cell expression of CD38, MHC-II and CD69 immune activation markers.

CONCLUSION::

Systemic murine malaria infection induced substantial upregulation of the mucosal homing integrin $\alpha 4\beta 7$ in blood, as well as gut and genital mucosal T cell immune activation and HIV co-receptor expression. Human studies are required to confirm these murine findings, and to examine whether malaria infection enhances the sexual acquisition of HIV.