Impaired immune response in severe human lower tract respiratory infection by respiratory syncytial virus

Larrañaga, Carmen L.

Ampuero, Sandra L.

Luchsinger, Vivian F.

Carrión, Flavio A.

Aguilar, Nelson V.

Morales, Pamela R.

Palomino, María Angélica M.

Tapia, Lorena F.

Avendaño, Luis F.

Background: Respiratory syncytial virus (RSV) is a major cause of acute lower respiratory infection in infants. The immune response plays a leading role in the severity of the disease. We hypothesized that severe RSV disease is associated with an impaired immune response characterized by low circulating T lymphocytes and plasma cytokine concentrations. Methods: We evaluate the in vivo immune responses of previously healthy infants with their first proven RSV-acute lower respiratory infection that required hospitalization. According to the clinical severity, defined by using a strict scoring system, the in vivo immune response was compared through the analysis of plasma cytokine values and the phenotyping of peripheral blood lymphocyte and natural killer (NK) cells. Results: Absolute blood cell counts of CD4+, CD8+, and CD19+ lymphocytes and NK cells were lower in subjects with RSV than in control infants. Lowest cell counts were observed in more severe RSV-infected infants. Significant