CXC4 with gp120, can cause upregulation of TRAIL receptors and consequent sensitivity to apoptosis by this pathway. In this work, our aim was to measure if CD4+ T lymphocytes from HIV+ patients, had and increased expression of TRAIL ligand and death receptors (DR) 5/4 and coreceptor CXC4 and, evaluate its association

Methods Ten HIV+ ART naïve patients and seven HIV-donors were recruited. The immunophenotyping of CD4+ T lymphocytes was performed with CD3+/CD4+ labeling, after that the TRAIL death receptors DR4 and DR5 as well as the TRAIL ligand and the coreceptor CXC4 were measured for expression and MFI (median fluorescence intensity) by flow cytometry in whole blood samples

Results CD4+ T lymphocytes from HIV+ patients showed an augmented expression and MFI of both death receptors and TRAIL ligand compared with the healthy controls; on the other hand, expression of coreceptor CXC4 was increased in the HIV+ group and the MFI showed a significant difference compared to healthy subjects. Correlations between DR4 and the TRAIL ligand with CXC4 showed no significance; in contrast, both expression and MFI of DR5 and CXC4 were significant and showed a strong direct correlation (expression: p<0.05 r=0.69 and MFI: p<0.005 r=0.81).

Conclusion There is evidence of apoptosis triggered by CXC4 activation, not related to the Fas pathway, which is one of the main causes related to cell depletion in HIV infection. The upregulation of the TRAIL pathway in HIV infected subjects is correlated with the CXC4 expression, which could be the cause of the reported apoptosis in these patients.

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