Retrovirology

Poster presentation

P10-04. Mechanisms of HIV-1 detection by plasmacytoid dendritic cells

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Background

Plasmacytoid dendritic cells (pDCs), the main type I interferons (IFNs) producer cells, are important players of HIV-induced physiopathological events. The number of circulating pDCs is decreased in HIV-1-infected patients. *In vitro*, incubation of pDCs with HIV-1 virions induces their maturation. The molecular and cellular mechanisms involved in HIV-1 recognition by pDCs are partly characterized. Two cellular receptors have been implicated in this recognition: the endosomal TLR7 molecule and CD4, the virus receptor. Whether other proteins, such as cytosolic sensors, also recognize HIV remains to be determined.

Methods

Our aims are: (1) to identify which HIV-1 components are necessary for IFNs production by pDCs, (2) to better characterize the cellular receptors and signalisation pathways involved. We compared the activation of pDCs, isolated from healthy donors, by HIV-infected T cells and cell free virus.

Results

HIV-infected T cells strongly induced the production of IFNs and other cytokines by pDCs, much more efficiently than cell free viral particles. This production was impaired by inhibitors of endosomal acidification, suggesting an involvement of endosomal TLRs. Preliminary evidence indicates that other cellular receptors are operative.

Conclusion

The characterization of mechanisms of innate HIV-1 recognition will allow to better understand the events occurring during the acute phase of the infection, as well as those involved in the chronic immune activation observed at later stages of the disease.