

Poster 9. HUMAN BLOOD T AND NK CELL *IN VITRO* STIMULATION REVEALS A SIMILAR ACTIVATION PHENOTYPE THAT RESEMBLES EARLY ACTIVATION STAGES DURING ACUTE VIRUS INFECTION

João Moura^{1,2,3}, Marta Gonçalves^{2,3}, Sónia Fonseca^{2,3}, Ana Helena Santos^{2,3}, Maria Luís Queirós^{2,3}, Maria dos Anjos Teixeira^{2,3}, Margarida Lima^{2,3}.

¹ Doutoramento em Ciências Biomédicas, Instituto de Ciências Biomédicas Abel Salazar, Universidade do Porto, Porto (aluno); ² Laboratório de Citometria do Serviço de Hematologia Clínica do Centro Hospitalar do Porto / Hospital de Santo António, Porto; ³ Unidade Multidisciplinar de Investigação Biomédica (UMIB).

Introdução e objectivos

The complexity of T and NK-cell responses needs a great deal of control in the way these cells respond to stimulation. This is made by a precise regulation of gene expression leading to specific changes of membrane proteins, in order to acquire their full cytotoxic or immunological mediators secreting potential. The immunophenotypic changes occurring *in-vivo* on blood T and NK-cells in patients with acute and chronic infections have been previously characterized in detail, defining early and late activation related phenotypes, but *in-vitro* experiments are needed to define the earliest activation stages.

Material e métodos

We have studied, by flow cytometry, the expression of adhesion (CD11c, CD38, CD45RA, CD45RO, CD56, CD57), co-stimulatory (CD2, CD27, CD28), immunoglobulin-like (CD7), MHC-II (HLA-DR) and lectin-type (CD69) molecules and cytokine receptors (CD25) on blood NK and T-cells during short term (7days) stimulation with. *In-vitro* NK-cell stimulation was done with PHA + IL12 + IL15 while T-cells were stimulated with ConA + IL2.

Resultados e conclusões

NK and T-cells showed an increase in CD25 and CD69 immediately after stimulation, followed by an increase in CD2 and CD7. This phenomenon is not observed *in-vivo* probably due to being a very early response upon stimulation. During this period T-cells also increased their CD28 expression while a first decrease in CD27 was observed. Following this first changes, and as previously described *in-vivo*, the expression of CD38 and HLA-DR increased until the end of the stimulation period, on both NK and T-cells. At the same time a loss of CD45RA and CD27 followed by gaining of CD45RO was observed in T-cells. Later activation markers like CD11c and de-novo expression of CD57 were not observed, although there was an increase in the percentage of CD11c positive-cells.

These results lead us to conclude that *in-vitro* stimulation mimics the NK and T-cell response to acute stimulation *in-vivo*, and that both cell lines have an identical early response to stimulation.

Contacto

João Moura, licenciado em Bioquímica, estagiário do Laboratório de Citometria do Serviço de Hematologia Clínica do Centro Hospitalar do Porto / Hospital de Santo António e aluno de doutoramento em Ciências Biomédicas do Instituto de Ciências Biomédicas Abel Salazar, Universidade do Porto, Porto.

jmouraalves@gmail.com