Retrovirology

Poster presentation

Immunological response in congenital cytomegalovirus infection

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Background

Human cytomegalovirus (CMV) is the main cause of congenital viral infection. There are not early and certain prognostic markers to define infection /disease course and no standard treatment of children with symptomatic congenital infection is available as yet. Indeed, a small number of infants present severe neurological complications and isolated visual and hearing impairments. The aim of our study is to verify possible correlations between immunologic alterations and clinical/ therapeutic aspects. Eighteen eligible infants were enrolled in our study. Eight of them were symptomatic, showing neurological alterations.

Methods

Lymphocyte proliferation was detected by co-culture with mitogens (Phytohemagglutinin and Pokeweed), anti-CD3 monoclonal antibody, recall (Candida) and CMV-specific antigens. T-cell receptor (TCR) repertoire of CD8+ and CD4+ T-cell subsets was analysed by Spectratyping after RNA extraction and cDNA synthesis and amplification with a SuperScript One-Step RT-PCR kit (Invitrogen) by 24 different Vβ primers combination with a 3' Cβ labelled primer. IFN-γ production after CMV lisate and peptides pool stimulation was evaluated by cellELISA in 384 wells microplates.

Results

Standard immunological investigations as immunoglobulins levels and cellular immunity did not show any alteration in both groups. All symptomatic patients (8/8) did not show any specific CMV response in lymphoproliferative assay. Six out of ten asymptomatic patients showed a good CMV specific response (Stimulation Index > 3). TCR spectratyping analysis on CD8 T-cell subset showed a various degree of alteration in all symptomatic patients and in six out of nine analysed asymptomatic patients. CellELISA assay on CD4 and CD8 T-cell subset was performed and the evaluation of results is ongoing.

Conclusions

Our preliminary data suggest a possible correlation between a lack of CMV specific response and higher degree alteration of TCR spectratyping analysis in symptomatic versus asymptomatic patients.