Gamma delta T cell

Gammadelta T cells (γδ T cells) are T cells that express a unique T-cell receptor (TCR) composed of one γ-chain and one δ-chain. Gammadelta T cells are of low abundance in the body, are found in the gut mucosa, skin, lungs, and uterus, and are involved in the initiation and propagation of immune responses.

The anti-tumoral contribution of Gamma delta T cells depends on their activation and differentiation into effectors. This depends on different molecules and membrane receptors, which conditions their physiology. Belghali et al. aimed to determine the phenotypic characteristics of γδT cells in glioblastoma (Glioblastoma) according to five layers of membrane receptors.

Among ten Glioblastoma cases initially enrolled, five of them who had been confirmed by pathological examination and ten healthy controls underwent phenotyping of peripheral γδT cells by flow cytometry, using the following staining: αβTCR, γδTCR, CD3, CD4, CD8, CD16, CD25, CD27, CD28, CD45, CD45RA, CD56, NKG2D, CD272(BTLA) and CD279(PD-1).

Compared to controls, the results showed no significant change in the number of γδT cells. However, they noted a decrease of double-negative (CD4- CD8-) Tγδ cells and an increase of naive γδT cells, a lack of CD25 expression, a decrease of the expression of CD279, and a remarkable, but not significant increase in the expression of the CD27 and CD28 costimulation markers. Among γδT cell subsets, the number of Vδ2 decreased in Glioblastoma and showed no significant difference in the expression of CD16, CD56, and NKG2D. In contrast, the number of Vδ1 increased in Glioblastoma with overexpression of CD16, CD56, and NKG2D.

The results showed that γδT cells are prone to adopt a pro-inflammatory profile in the Glioblastoma's context, which suggests that they might be a potential tool to consider in T cell-based glioblastoma immunotherapy. However, this requires additional investigation on a larger sample size [1)].

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