REGULATORY INNATE LYMPHOID CELLS SUPPRESS ANTI-TUMOUR T CELLS

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Anti-tumour T cells are subject to multiple mechanisms of negative regulation. Recent findings that innate lymphoid cells (ILCs), including natural killer (NK) cells, regulate adaptive T cell responses led us to examine their regulatory potential in the context of cancer. We have identified a novel ILC subset that regulates the activity of tumour-infiltrating lymphocytes (TIL). Our approach allowed us to isolate human regulatory ILCs from high-grade serous ovarian tumours, define their suppressive capacity *in vitro*, and perform a comprehensive analysis of their phenotype and function. Notably, the presence of regulatory ILCs in TIL cultures correlated with impaired T cell expansion and a striking reduction in the time to disease recurrence in patients. Functional studies revealed that regulatory ILCs suppressed both $CD4^+$ and $CD8^+$ TIL expansion and cytokine production. ILCs with regulatory potential could be distinguished phenotypically from conventional NK cells and other ILCs, suggesting they may constitute a novel innate lymphocyte population. These studies demonstrate a previously unidentified cell population regulates tumour-associated T cells.