In humans, MAIT cells represent the most abundant T cell subset reacting against bacteria. Their frequency in the blood is decreased in a large variety of infectious diseases of either bacterial or viral origin. MAIT cells accumulate at the site of bacterial infection and are protective in experimental infection models. Recent epidemiological evidence supports an implication of MAIT cells in protecting against tuberculosis. MAIT cells can be activated either through direct recognition of microbial ligands or by inflammatory cytokines such as IL-12 and IL-18. MAIT cells secrete IFN-γ, IL-17 and/or other effector molecules according to the context of triggering. MAIT cells can kill bacterially infected epithelial cells in vitro. Herein, we summarize and discuss the data suggesting a role for MAIT cells in infectious diseases.

A majority of T cells bearing the αβ T cell receptor (TCR) are specific for peptides bound to polymorphic classical major histocompatibility complex (MHC) molecules. Smaller subsets of T cells are reactive toward various nonpeptidic ligands associated with nonpolymorphic MHC class-Ib (MHC-Ib) molecules. These cells have been termed unconventional for decades, even though only the composite antigen is different from the one seen by classical T cells. Herein, we discuss the identity of these particular T cells in light of the coevolution of their TCR and MHC-Ib restricting elements. We examine their original thymic development: selection on hematopoietic cells leading to the acquisition of an original differentiation program. Most of these cells acquire memory cell features during thymic maturation and exhibit unique patterns of migration into peripheral nonlymphoid tissues to become tissue resident. Thus, these cells are termed preset T cells, as they also display a variety of effector functions. They may act as microbial or danger sentinels, fight microbes, or regulate tissue homeostasis. Expected final online publication date for the Annual Review of Cell and Developmental Biology Volume 33 is October 6, 2017. Please see http://www.annualreviews.org/page/journal/pubdates for revised estimates.
The biological and prognostic significance of angiotropism in uveal melanoma.  

Summary

Angiotropism is a marker of extravascular migration of melanoma cells along vascular and other structures and a prognostic factor in cutaneous melanoma. Because of this biological and prognostic importance in cutaneous melanoma, angiotropism was studied in uveal melanoma (UM). This retrospective study performed at a single ocular oncology referral center included 89 patients from the study period 2006-2008. All patients were diagnosed with UM from the choroid and/or ciliary body. All patients underwent enucleation for prognostic purposes and definitive therapy. Clinical, histopathological, and molecular variables included patient age, gender, extraocular extension, tumor location (ciliary body or not), optic nerve invasion, angiotropism, neurotropism, melanoma cell type, BAP1 mutation, and monosomy 3. Angiotropism was defined as melanoma cells arrayed along the abluminal vascular surfaces without intravasation in the sclera and/or episcleral tissue. The study included 51 women (57.3%) and 38 men with mean and median age: 63 years (range: 25-92). Mean follow-up was 4.4 years (range: 0.2 to 11). Fifty-three (59.6%) patients developed metastases and 48 (53.9%) were dead from metastases at last follow-up. Other principal variables recorded were angiotropism in 43.8%, extraocular extension in 7.9%, epithelioid/mixed cell type in 73.1%, BAP1 mutation in 41.3%, and monosomy 3 in 53.6% of cases. On multivariate analysis, extraocular extension, angiotropism, and monosomy 3 were predictive of metastasis, whereas tumor diameter, epithelioid cell type, angiotropism, and monosomy 3 were predictive of death. Chi-square test confirmed an association between angiotropism and metastasis and death but none with BAP1 mutation and monosomy 3. In conclusion, angiotropism and monosomy 3 were independent prognostic factors for both metastases and death in UM. However, irrespective of any prognostic value, the true importance of angiotropism is its biological significance as a marker of an alternative metastatic pathway. Laboratory Investigation advance online publication, 27 February 2017; doi:10.1038/labinvest.2017.16.

Francesca Riva, Francois-Clement Bidard, Alexandre Houy, Adrien Saliou, Jordan Madic, Aurore Rampanou, Caroline Hego, Maud Milder, Paul Cottu, Marie-Paule Sablin, Anne Vincent-Salomon, Olivier Lantz, Marc-Henri Stern, Charlotte Proudhon, Jean-Yves Pierga (2017 Jan 12)

Patient-Specific Circulating Tumor DNA Detection during Neoadjuvant Chemotherapy in Triple-Negative Breast Cancer.  

Summary

In nonmetastatic triple-negative breast cancer (TNBC) patients, we investigated whether circulating tumor DNA (ctDNA) detection can reflect the tumor response to neoadjuvant chemotherapy (NCT) and detect minimal residual disease after surgery.
Team Publications

Innate like and CD4+ T cells in cancer