



POSTER PRESENTATION

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Enrichment of KIR+CD57+ highly cytotoxic NK cells in sentinel lymph nodes of melanoma patients

Talib Hassan Ali^{1,2}, Simona Pisanti³, Elena Ciaglia³, Roberta Mortarini⁴, Andrea Anichini⁴, Mario Santinami⁴, Elio Gulletta¹, Caterina Ietto¹, Mario Galgani⁵, Cinzia Garofalo¹, Giuseppe Matarese^{5,6}, Maurizio Bifulco³, Soldano Ferrone⁷, Francesco Colucci⁸, Alessandro Moretta⁹, Klas Kärre¹⁰, Ennio Carbone^{1,10*}

From Melanoma Bridge meeting 2013
Naples, Italy. 5-8 December 2013

Background

NK cells contribute to melanoma cell recognition and anti-tumor immunity, which is traditionally analyzed using human peripheral blood NK cells. An important checkpoint in the progression of malignant melanoma is the metastasis to lymph nodes.

Materials and methods

To investigate the role of lymph node NK cells in disease progression, we analyzed frequency, phenotype and functions of NK cells purified from either tumor infiltrated lymph nodes or tumor-free ipsilateral lymph nodes of the same patients. Lymph node NK cells were compared to peripheral blood NK cells from either melanoma patients or healthy donors.

Results

The data showed an expansion of CD56^{dim}CD57+CD69+CCR7+KIR+ NK cells in tumor infiltrated lymph nodes. This phenotype corresponds to a recently described fully mature and highly cytotoxic NK cell population, and indeed we found that these lymph node NK cells displayed robust anti-tumor activity against autologous melanoma cells. The NK cells trafficking from periphery to the tumor draining lymph nodes have been investigated and the chemokines pattern identified. Moreover, the presence of a high proportion of KIR+CD57+CD56^{dim} in the infiltrated lymph nodes was associated with an improved patients' survival.

Conclusions

Our data suggest that NK cells from tumor infiltrated lymph nodes are attractive candidates to improve current NK cell-based immunotherapy of melanoma.

Authors' details

¹Department of Experimental and Clinical Medicine "G. Salvatore", University of Catanzaro 'Magna Graecia', Catanzaro, Italy. ²Department of Microbiology, College of Medicine, University of Thi-Qar, Nasseriah, Iraq. ³Department of Pharmaceutical and Biomedical Sciences, University of Salerno, Salerno, Italy. ⁴Human Tumors Immunobiology Unit, Dept. of Experimental Oncology and Molecular Medicine (R.M. and A.A.), and Melanoma and Sarcoma Unit, Dept. of Surgery (M.S.), Fondazione IRCCS Istituto Nazionale dei Tumori, Milan, Italy. ⁵Istituto di Endocrinologia e Oncologia Sperimentale, Consiglio Nazionale delle Ricerche (IEOS-CNR), Naples, Italy. ⁶Department of Medicine, University of Salerno, Salerno, Italy. ⁷Department of Surgery, Immunology and Pathology, University of Pittsburgh Cancer Institute, Pittsburgh, Pennsylvania, USA. ⁸Department of Obstetrics and Gynaecology, University of Cambridge Clinical School, Cambridge, UK. ⁹Lab. of Molecular Immunology, Department of Experimental Medicine, University of Genova, Genova, Italy. ¹⁰Department of Microbiology Tumor and Cell Biology, Karolinska Institute, Stockholm, Sweden.

Published: 6 May 2014

doi:10.1186/1479-5876-12-S1-P10

Cite this article as: Ali et al.: Enrichment of KIR+CD57+ highly cytotoxic NK cells in sentinel lymph nodes of melanoma patients. *Journal of Translational Medicine* 2014 **12**(Suppl 1):P10.

* Correspondence: Ennio.Carbone@ki.se

¹Department of Experimental and Clinical Medicine "G. Salvatore", University of Catanzaro 'Magna Graecia', Catanzaro, Italy

Full list of author information is available at the end of the article