Title: Prolongation of Life by Adoptive Cell Therapy with Cascade Primed Immune Cells in Patients with Breast Cancer and NSCLC

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Abstract

In the NSCLC patient group treated with CAPRI cells, the 12-month average survival time was 11.90 ± 0.072 months. In the NSCLC patient control group, the 12-monthaverage survival time was 10.73 ± 0.043 months. Log rank (Mantel-Cox) test showed $\chi 2 = 5.76$, $p = 0.016$. After 1 year follow-up, CAPRI therapy indicated an increase survival time for the NSCLC patients.

5-year survival curve of patients treated with CAPRI cells (n = 59) was compared with patients from the Munich Tumor Center (n = 9821) without CAPRI therapy in the same tumor stages. Each patient (T1-4N0-2, G2-3) without metastasis (M0) was included in the analysis if receiving at least 500 × 106 CAPRI cells. Kaplan–Meier analysis is shown, log rank (Mantel-Cox; $\chi 2 = 14.805$; $p = 1.192 \times 10^{-4}$).

The 5-year survival curve for patients treated with CAPRI cells
(n = 46) was compared with patients from the Munich Tumor Center (n = 1801) without CAPRI therapy in the same tumor stages. Each patient (T1-4N0-2, G2-3) with diagnosed distant metastasis (M1) was included in the analysis, if receiving at least 500 × 106 CAPRI cells. Kaplan–Meier analysis is shown, log-rank (Mantel-Cox; $\chi 2 = 34.383$; $p = 4.35 \times 10^{-9}$).

Novel ACT with CAPRI cells significantly increased the survival rate of patients with breast cancer, with and without metastases, and also of patients with NSCLC. The life quality in these patients was maintained. The efficiency of CAPRI cells is based on several factors: first, on monocytes that were, for the first time, identified as cells harboring immunogenic cancer information and activated with activated T cells; second, on lymphocytes of the peripheral blood that were not damaged by encounter with cancer cells, which can inactivate T cells by rudimentary signaling; third, on the cooperation of cytotoxic CD8+ and CD4+ T cells, which were stimulated together, allowing supporting interactions ('help') during priming and cooperative cytotoxicity against cancer cells; fourth, on continuous therapy, as CAPRI cells are given repeatedly over many years; and finally, on the advantage that 'tumor-edited' cancer cells and their products will also be ingested and processed by monocytes. This means that lymphocytes can be primed years later against the new cancer variants, underlining the value of a continuous CAPRI cell therapy.

Biography

Dr. Songhai Gu: 1990 graduated from the Biology Department of Wuhan University, Bachelor of Science. The Ministry of Health in 1993, Wuhan Institute of Biological Products of Medical, Master of Science. From 1993 to 1998, Department of Immunology, Wuhan Institute of Biological Products Research Institute of Biological Products, engaged in the research and development work, Assistant Professor (Lecturer). From 1998 to 2002, the University of Munich (LMU) Institute of immunology, 2002, Doctor of Human Biology. From 2002 to 2005, University of Munich postdoctoral research immune. Since 2005, Munich Immune Therapy and Research Center (Immunotherapie ForschungsZentrum, Muenchen), Researcher. Mainly engaged in the development and application of adoptive immunotherapy in the treatment of tumor, genetic etiology, immune genetics of cancer and mental disease.

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