Immunization with HCs induced activation of proliferating and cytotoxic T cells and significantly retarded tumor growth, also confirmed by upregulated expression of distinct cytokines genes. The same observations accented by vaccination with HCs in the tumor bearing host. Finally, when T cells from HCs vaccinated mice were transferred into naive tumor-bearing mice, tumor growth was most strongly retarded and an efficient proliferative and cytotoxic T cell response was observed. Tumor growth was reduced by over 50%, and tumor development was significantly delayed.
Taken together, we demonstrate that HCs offer for an effective immunotherapy of poorly immunogenic carcinomas. This is independent of whether the HCs are taken for adoptive transfer or as a vaccine.

542 POSTER

Combination of hybrid-primed lymphocytes and hybrid vaccination prevent tumor growth of Lewis Lung Carcinoma in mice

R. Savai[1], R. Schermuly[2], M. Schneider[1], S. Pullamsetti[2], S. Greschus[3], F. Grimminger[2], W. Seeger[2], G. Banat[1]. *[1]Justus-Liebig-University, Department of Hematology & Oncology, Giessen, Germany; [2]Justus-Liebig-University, Department of Internal Medicine II, Giessen, Germany; [3]Justus-Liebig-University, Department of Neuroradiology, Giessen, Germany*

Immunotherapy with tumor cell-dendritic cell fusion hybrids has been shown to induce immune response against multiple tumor antigens including unknown tumor antigens. The aim of this study was to explore the possibility of optimizing the host protective anti tumor immunity by combined immunization strategies of tumor cell-dendritic cell fusion hybrids. Further, the effects of combined immunization strategies on tumors were evaluated by flat-panel volumetric Computer tomography (fpvCT) and immunohistochemical (IHC) analysis. As previously shown fusion of C57BL/6 mice bone marrow derived dendritic cells with Lewis Lung Carcinoma (LLC1) cells were effective against poorly immunogenic carcinomas with all three potential tumor-therapeutic strategies applied: protective immunization, vaccination and adoptive cellular therapy.
Interestingly, in this study combination of hybrid-primed lymphocytes and hybrid vaccination induced activation of proliferating and cytotoxic T cells and significantly retardation tumor growth (85%). In addition, a significant delay in tumor development, a reduction in the number of pulmonary metastases and survival times were observed. Further, the tumor bearing mice treated with hybrids displayed significant morphological changes of apoptosis compared to LLC1 and dendritic cell treated groups shown by IHC analysis and Tunel assay. An increased CD3 expression was also observed in these hybrid treated tumors, which was accompanied by strong involvement of tumor infiltrating T cells.
These findings were underlined by clearly increased spleen size compared to other treatment regimens. Thereby, these results demonstrate that the combination therapy of fusion hybrids is an effective immunotherapeutic regimen against poorly immunogenic carcinomas.

543 POSTER

Expression of survivin, a novel inhibitor of apoptosis, in advanced rectal cancer with preoperative chemoradiotherapy

Y.J. Choi[1], Y.T. Kim[2], E.J. Chung[3], S.M. Park[4], J.G. Kang[5]. *[1]National Health Insurance Corporation Ilsan Hospital, Pathology, Koyang, Korea; [2]National Health Insurance Corporation Ilsan Hospital, Internal Medicine, Koyang, Korea; [3]National Health Insurance Corporation Ilsan Hospital, Radiation Oncology, Koyang, Korea; [4]National Health Insurance Corporation Ilsan Hospital, Diagnostic Radiology, Koyang, Korea; [5]National Health Insurance Corporation Ilsan Hospital, Surgery, Koyang, Korea*

Background: Survivin is a recently described member of the family of inhibitor of apoptosis protein. We investigated the association of survivin expression with prognosis and other apoptosis-related biological factors in advanced rectal cancer with preoperative chemoradiotherapy.
Material and methods: We examined 16 patients with rectal cancer, who were preoperatively staged as at least T3 or T4 (determined by MRI). Enrolled patients were given by 5-FU 425 mg/m^2/day and leucovorin 20 mg/m^2/day intravenously for 3 days during weeks 1 and 5 of pelvic radiotherapy (45 Gy). Surgical resection was performed 4–6 weeks after completion of the scheduled treatment and the patients were followed for up to 55 months after operation. Tumor response was divided as CR (complete response), PR (partial response; over 50% diminution of tumor volume) and NR (no/minimal response). Immunohistochemical staining of paraffin sections using monoclonal antibodies for survivin, bcl-2, p53 and ki-67 was performed on pretreatment biopsy and surgically resected tissues.
Results: No CR was achieved. PR was obtained in 10 patients (62.5%) and NR in 6 patients (37.5%). Survivin expression was found in cytoplasm or nucleus of tumor cells but not in nonneoplastic cells on pretreatment biopsy. After preoperative treatment, survivin expression tended to be decreased in tumor cells (62.5% to 31.3%) and slightly increased in adjacent normal mucosa. The NR cases showed high survivin expression on pretreatment biopsy (5/6). Survivin positivity on pretreatment biopsy showed the tendency of low apoptotic index and low median time to progression. But we failed to find any significant relationship between survivin expression and any of the parameters examined.
Conclusions: In this study, the immunohistochemical assessment of survivin status does not seem to be helpful in the prognostic characterization of rectal cancer. Further studies including more cases with sufficient follow-up period are needed in order to provide survivin as a prognostic and therapeutic target in rectal cancer.

Publication
Cytokines/immunobiology/immunotherapy

544 PUBLICATION

Tumor-associated antigens in rheumatoid arthritis

E. Szekanecz[1], P. Antal-Szalmás[2], Z. Sándor[3], Z. Szekanecz[4]. *[1]Univ. of Debrecen Medical and Health Science Cente, Oncology, Debrecen, Hungary; [2]D, .Department of Clinical Biochemistry and Molecular Pathology; [3]D, .Department of Pathology and Division of Rheumatology; [4]Third Department of Medicine, Division of Rheumatology, University of Debrecen Medical Center, Debrecen, Hungary*

Background: There have been scattered reports, that some tumor-associated antigens (TAA) may, apart from cancer cells, become expressed ont he surface of inflammatory cells. Carcinoembryonic antigen (CEA) is present mostly on colorectal and gastric carcinomas, CA 15–3 on breast carcinoma, CA 19–9 on pancreatic carcinoma, CA 125 on ovarian carcinoma, CA 72–4 on gastric and mucinous ovarian carcinoma and neuron-specific enolase (NSE) on small-cell lung carcinoma and neuroblastoma. However, recent studies revealed that soluble carcinoembryonic antigen (CEA), as well as CA 19–9, CA 125 and CA 15–3 TAAs may be detected in the sera or on synovial cells of patients with rheumatoid arthritis (RA), as well as in the sera of patients with scleroderma, lupus and Sjögren's syndrome.
Objectives: In this study, we assessed levels of various TAAs in the sera of RA patients and healthy subjects. Serum TAA levels were correlated with markers of disease activity.
Methods: TAAs including CEA, CA 15–3, CA 72–4, CA 125, CA 19–9 and NSE were assessed by ELISA in the sera of 78 patients with established, treated RA (disease duration >2 years) and 50 age- and sex-matched healthy controls. Normal upper limits for these TAAs were 3.4 μg/l, 25 kU/l, 6.9 kU/l, 35 kU/l, 34 kU/l and 16.3 μg/l, respectively. TAA concentrations were correlated with serum rheumatoid factor (RF; <50 U/ml), anti-CCP (<25 U/ml) and CRP (<5 mg/l). DAS28 indicating clinical disease activity was also assessed.
Results: There were more RA patients showing abnormally high levels of TAAs in comparison to controls (CEA: 12.8% vs 6%; CA 125: 11.5% vs 4%; CA 19–9: 7.7% vs 6%; CA 15–3: 15.4% vs 4%; CA 72–4: 3.8% vs 0%; NSE: 20.1% vs 8%). Significant differences were found in the case of CEA, CA 125, CA 15–3, CA 72–4 and NSE ($p < 0.05$). Among RA patients, serum NSE levels showed significant correlation with CRP ($r = 0.42$, $p < 0.05$), as well as anti-CCP levels ($r = 0.62$, $p < 0.05$). None of the assessed TAAs showed any correlation with DAS28.
Conclusion: The concentration of some TAAs may be elevated in the sera of patients with established RA in comparison to healthy subjects. Furthermore, some TAAs, such as NSE, may also correlate with laboratory markers of RA.

545 PUBLICATION

Investigation of TNF-alpha activity on new cell line from patients with myelodisplastic syndroma

V. Jurisic[1], G. Bogdanovic[2], V. Kojic[2], J. Mrdjanovic[2], D. Jakimov[2], N. Kraguljac. *[1]School of Medicine, University of Kragujevac, Physiopathology, Kragujevac, Serbia; [2]Institute of Oncology, Exp Laboratory, Novi Sad, Serbia; [3]Institute of Hematology, Flow cytometry laboratory, Belgrade, Serbia*

TNF-alpa is a pleiotropic cytokine which can induce apoptosis is sensitive cells, but also regulated cell proliferation, cellular activation and differentiation. To be better estimated TNF-alpha effects on new establisched cell line, entitled PC, originally developed from patients with myelodisplastic syndrome at Institute of Oncology Sremska, Kamenica, Novi Sad. In this research we monitored the kinetics of changes after in