

Abstracts

P17.63. COMBINATION THERAPY WITH TEMOZOLOMIDE, INTERFERON-BETA, AND RIBAVIRIN IN GLIOMA CELL LINES
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INTRODUCTION: Although Temozolomide (TMZ) with radiotherapy

significantly improves the survival of newly diagnosed glioblastoma although most patients develop tumor progression within 1-2 years. The Japan Clinical Oncology Group (JCOG) are ongoing a phase II randomized study to evaluate the clinical effectiveness of TMZ and Interferon- β (IFN- β) combination therapy in glioblastoma patients. Meanwhile, Ribavirin (RBV) is a standard agent of treating of chronic hepatitis C together with interferon- α . Recently, an anti-tumor effect of RBV was reported in breast cancer and chronic myelocytic leukemia. We evaluated the effect of TMZ, IFN- β , and RBV combination therapy in glioma cell lines. METHODS: Glioma cell lines used were A-172, AM-38, T98G, U-87MG, U-138MG, U-251MG, and YH-13. Glioma cell lines were cultured in an incubator for 48 hours and administered with either 1. TMZ (10 μ M) + IFN- β (10 IU/ml) or 2. TMZ (10 μ M) + IFN- β (10 IU/ml) + RBV (10 μ M). At 72 to 96 hours post-treatment, the number of remaining glioma cells were counted to evaluate the growth-inhibitory effects of each therapy. In addition, cell cycle changes by flow cytometry and p53 activity with western blot analysis were examined from U-87 MG cell line. RESULTS AND CONCLUSIONS: In all cell lines, the triple combination therapy enhanced the growth-inhibitory effect compared to dual combination therapy. Triple therapy led to distribution of G2/M phase of the cell cycle and accumulated p53 activity. Ribavirin enhanced antitumor effect of TMZ and IFN combination therapy in glioma cell lines.