INHIBITORS OF PROTEOLYSIS IN CEREBROSPINAL FLUID OF PATIENTS WITH MALIGNANT GLIOMAS AFTER TWO TYPES OF LOCAL INTRAOPERATIVE CHEMOTHERAPY

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Aim: Endogenous inhibitors (EI), being acute phase proteins, can give information on effectiveness of local intraoperative chemotherapy (LICT).

Methods: α-2-Macroglobulin (α-2M) and α-1-proteinase inhibitor (α-1PI) were defined in cerebrospinal fluid (CF) of patients with malignant gliomas (MG) (28 men, 14 women, T2-4N,M1) before LICT and in postoperative period (p/o). LICT-1: carboplatin 0.2 mg was put in a container of haemostatic sponge, and after hemostasis was secured, it was placed in tumor bed (22 patients); LICT-2: 0.4 mg cisplatin and 15 mg methotrexate were introduced in the tumor bed through the Ommaya Reservoir, and repeated twice with 1 month intervals (20 patients). EI were detected by the ELISA method using standard test kits. CF of 9 patients without inflammatory or malignant processes in brain served as control (CCF).

Results: On the 7th day (7d) after LICT-1 (a/LICT-1) and LICT-2 α-2M in all patients was higher than CCF (р<0.01) but lower (р<0.01) than the data before the treatment (background). In groups with unfavorable p/o (–p/o) α-2M was lower than that in groups with favorable p/o (+p/o, р<0.01 in all the cases) in both types of LICT. One month (1m) a/LICT-2 α-2M was significantly lower (р<0.01) than that a/LICT-1, and 2m a/LICT-1 decreased in comparison with the previous period and background (р<0.1 in all the cases) being still higher than CCF, with no lethal outcomes. EI α-1PI a/LICT-1 on 7d was higher than CCF and background (р<0.01) in patients with –p/o and exceeded the index of the group with +p/o where it decreased in comparison with background still being higher than CCF (р<0.01). In 1m α-1PI was equal to CCF in survived patients. In –p/o a/LICT-2 decrease of α-1PI was observed on 7d (р<0.01) with its increase in 1m (р<0.01) and retention of activity in 2m. In groups with –p/o on 7d a/LICT-1 and a/LICT-2 α-1PI was higher than in groups with +p/o, background and CCF (р<0.01 in all cases).

Conclusions: Moderate activation of EI in treatment of MG and their stabilization stimulate endogenous protection in both types of therapy, but LICT-2 appeared to be more adequate.

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