МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
НАЦІОНАЛЬНА АКАДЕМІЯ МЕДИЧНИХ НАУК УКРАЇНИ
ДУ «ІНСТИТУТ НЕЙРОХІРУРГІЇ ІМ. АКАД. А.П. РОМОДАНОВА НАМН УКРАЇНИ»
УКРАЇНСЬКА АСОЦІАЦІЯ НЕЙРОХІРУРГІВ

МАТЕРІАЛИ
НАУКОВО-ПРАКТИЧНОЇ КОНФЕРЕНЦІЇ
З МІЖНАРОДНОЮ УЧАСТЮ
«АКТУАЛЬНІ ПИТАННЯ ЛІКУВАННЯ ГЛІОМ ГОЛОВНОГО МОЗКУ»

ЛЬВІВ-2015
УКРАЇНА

Results: Down-regulation of miR-31-5p was successfully validated on cohort of 58 GBM patients and 10 samples of non-tumor brain tissue ($p<0.001$). MiR-31-5p was significantly associated also with progression free and overall survival of GBM patients. Transient expression of miR-31-5p led to the significant decrease of GBM cell proliferation and viability in A172, U87MG, T98G, and U251 cell lines (t-test; $p < 0.05$) due to the cell cycle arrest in G1 phase. Moreover, transfected A172 and U251 cells had a lower migration and invasiveness potential in comparison with control cells (t-test; $p < 0.05$). Finally, analysis of global gene expression profiles together with predicted mRNA targets revealed several interesting targets of miR-31-5p, which are involved in crucial signaling pathways of GBM. Conclusion: Taken together, our data suggest that miR-31-5p is not only powerful diagnostic marker as showed previously but seems to be promising therapeutic target in GBM patients. This work was supported by grants of Internal Grant Agency of the Czech Ministry of Health no. NT13514-4/2012, NT/13860-4/2012, NT/13549-4/2012 and NT/13547-4/2012.

TEMOZOLAMID FOR SEIZURE CONTROL IN PATIENTS WITH ELOQUENT AREAS LOW-GRADE GLIOMAS

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Background and purpose. Seizures affect 30–90% of patients with a glioma and are particularly prevalent in patients with low-grade glioma (LGG), compared with 1-2% of the general population. Tumor location and histology influence the risk for epilepsy. Uncontrolled seizures may result in high morbidity and negatively impact quality of life. The scarce data on chemotherapy in adult LGG reported in the literature reveal that LGG seems to be less chemosensitive than anaplastic forms, but that chemotherapy may induce long-term stabilization of the disease and important clinical benefits, including control of epilepsy. In most cases, either the seizure or the medications used to treat the seizure may contribute to cognitive and psychosocial difficulties of various degrees of severity. Therefore, achieving seizure control is an important challenge in the clinical management of LGG.

Case report. 34-year-old woman presented with partial seizures (semi-rhythmic clonic activity of the face). Initial brain MRI revealed a lesion in the left precentral gyrus suspected to be a low-grade glioma. The patient underwent stereotactic biopsy and was given a diagnosis of Grade II oligodendroglioma. The patient underwent 2 partial tumor resections under intraoperative monitoring. Resection was stopped when motor pathways were encountered. This patient tolerated the procedures well, but suffered from complex partial seizures after 1st operation and simple partial seizures (face, right wrist, right leg) with mild right wrist paralysis after 2nd operation. Final histopathological evaluation of the tumor was consistent with Grade II oligoastrocytoma. Pharmacoresistance was confirmed and she subsequently underwent chemotherapy (temozolomide). She has remained seizure free (Engel Class I outcome) and no further tumor progression has been noted at serial follow-up appointments up to 29 months.

Discussion The risk of resection can be substantial due to the vicinity of the tumor relative to the surrounding functional cortex and vascular structures. The major goals of surgery are to avoid neurological morbidity, relieve any mass effect (which is rare), provide a diagnosis (and avoid sampling error), control seizures, and decrease the likelihood of recurrence and malignant transformation by cytoreduction. Chemotherapy with alkylating agents (procarbazine + CCNU + vincristine, temozolomide) are effective in reducing the frequency of seizures in patients with pharmacoresistant epilepsy. The majority of patients are treated with anticonvulsant monotherapy; however, many patients require multidrug therapy, or their seizures are refractory to antiepileptic drugs altogether. The oral alkylating agent temozolomide has emerged as a potential initial treatment option for LGG.

Conclusion The high response rate confirms that TMZ chemotherapy is a valid option in the treatment of seizure control in patients with eloquent areas low-grade gliomas. Total or near total surgical resection predicts better seizure outcome for most low-grade histologies.