

## UKRAIN THERAPY OF A RECURRENT ASTROCYTOMA OF THE OPTIC NERVE (CASE REPORT)

STEINACKER J., KORSH O.B.\*, MELNYK A.

Ukrainian Anti-Cancer Institute, Margaretenstrasse 7, 1040 Vienna, Austria.

**Summary:** *An eight year old girl was twice operated (1989 and 1991) for a Grade I astrocytoma of the chiasma. Because of early recurrence and the fact that the tumour could only be extirpated subtotally Ukrain monotherapy was initiated.*

### Introduction

Ukrain, a semisynthetic compound from *Chelidonium majus L.* alkaloids and thiophosphoric triaziridide, is an immunostimulator and immunomodulator with known anticancer properties (1). It exerts growth-inhibiting properties in all human cell lines tested to date. In a series of eight human brain cell lines, only one line did not reach the GI50 value and one cell line did not reach the TGI value (2). With these encouraging results, Ukrain was given to a patient whose parents refused chemo- or radiation therapy because of the severe side effects and questionable success reported with these treatments.

### Patient and methods

Patient N.N., born 31 March 1987, female, developed in 1989 a right-sided nystagmus and

lost considerable weight. A large space-occupying lesion could be demonstrated by CT and MR in the suprasellar hypothalamus-chiasma region involving the third ventricle into the clivus. Surgery was carried out on 13 December 1989. Operative report: Left frontal trepanation. After opening the dura two veins to the sphenoid sinus had to be coagulated and cut. Preparation of the carotid and the left optic nerve. The optic nerve is flattened and displaced laterally. The posterior communicating artery and the arteries to the hypothalamus and the choroid are displaced laterally by an underlying, greyish tumour and spliced. Opening of the Sylvian sulcus onto the carotid bifurcation. Preparation following the anterior median field: everywhere only tumour is seen. No chiasma can be demonstrated. First the tumour is removed from the left optic nerve, easily accomplished distal to the foramen but more difficult nearer to it. The basilar artery is exposed. The right optic nerve seems to be invaded by the tumour. Biopsy report from tumour specimens: HE, Gieson, PAS stains: Glioma with few cells, few pleomorphic nuclei with heterochromatin.

\* Author to whom correspondence should be addressed.

Steinacker J., Korsh O.B., Melnyk A.

Numerous small vessels. No endothelial proliferation. Some relatively large cells with round and enlarged hyperchromic nuclei. Some Rosenthal fibres or small protein structures. Pilocytic astrocytoma, Grade I.

Development of diabetes insipidus treated with minirine. No radiation or chemotherapy.

The EEG shows nothing unusual. Retardation, no spike-wave activity, monomorphic theta waves.

Beginning 1991 a definite recurrence of the right-sided tumour could be demonstrated and the right eye is blind.

Second operation on 25 April 1991.

Surgical pathology: HE, Gieson and PAS stains: Fibrous structures with scanty cells and clusters of cells not unlike the first biopsy. Different degrees of vascularisation. Few Rosenthal fibres.

Unlike the earlier findings, poorly demarcated small-to-average cells with small-to-average sized nuclei are present; average pleomorphism. Siderophages. No sign of increased undifferentiation. More cells than in the preparation of 1989, perhaps with increased tendency to proliferation.

Radiation or chemotherapy was refused in spite of the medical proposals.

Hemianopsia of the left visual field developed; blindness at right. No changes since October 1993; perhaps slight increase of the visual field.

Ukrain treatment was started on 21 April 1994 and continued till 27 March 1995.

To date nine courses of Ukrain were carried out. Single doses from 2 to 15 ml, i.v., were given ten times each course, to a total of 723 mg.

## Results

MRT evaluations 22 March 1994: No significant changes when compared with the investigation from 12 October 1993. The lesion at the optic chiasma seems to have increased slightly in size. The maximum point is situated within the chiasma and the bilateral optical tract, two contrast medium affine, oval lesions, spreading laterally on both sides to the internal carotid artery. The suprasellar cisterns are invaded by tumour.

Cranially the lesion touches the brain over a wide surface. The third ventricle is compressed from the left inferior aspect. The hypophyseal truncus turns to left, the hypophyseal rest lies flat on the sella floor.

Studied under contrast medium, the tumour shows strong enhancement. The optic nerve is anatomically normal without signs of infiltration towards the optic canal.

25 May 1994. No changes in size and configuration bilaterally within the optical chiasma tumour which is more marked when compared to the results of 22 March 1994. At the left side, there was pressure below the third ventricle compressing on a short distance even the right temporal lobe. The structure to the right shows the largest cranio-caudal diameter of ca. 1.5 cm looking like two adjacent balls. The ACI touches the tumour for a short distance. The prepontine cisterna is partially filled with tumour mass, especially on the right side. The infundibulum tends to the right. The contrast enhancement after contrast medium application is somewhat decreased in comparison to the previous investigation. Small periventricular lacunar lesions (diameter about 2-3 mm), of the right frontal horn ventricle persist.

2 September 1994. No significant changes compared to the investigation of 25 May 1994. The structures at the chiasma and optical tract which show intense contrast medium uptake seem to be somewhat more prominent and nearer to the pons. No sign of infiltration of the optical canal. The floor of the third ventricle and the suprasellar cisterna are unchanged and filled with tumour formation. Very small subcortical lacunar lesions in the right ventricle frontal horn. A very slow progression may not be excluded with certainty.

20 May 1995. Compared to the investigation of 2 September 1994 a slight increase of the tumour size has occurred. A tumour nearly 1 cm in diameter, pointing cranially and slightly dorsally, is noted. A tuberos part of the tumour (about 6 mm diameter) pressing the third ventricle from below, has slightly increased in size. The main mass situated at the chiasma remains unchanged. The tumour attached to the carotid artery shows direct

contrast with the basilar artery dorsally. The signal compartment of the tumour has not changed. At T2 weighted hypertense; at T1 weighted hypotense, with clear enhancement with contrast medium. The inner and outer liquor spaces of normal shape.

The patient feels well and is doing well at school.

### Discussion

An optic glioma which had recurred within two years proved to be generally stable over four years after a second operation and monotherapy with Ukrain. In the MRT there are only minimal changes within the remaining tumour. According to the literature (3) five-year survival after pilocystic astrocytoma is 80 percent. Hypothalamic compression may cause endocrine dysfunctions. Malignant degeneration is heralded by rapid progression of

symptoms and signs. The mean life expectancy for supratentorial tumour is 67 months.

Patients with juvenile pilocystic astrocytoma in the hypothalamic region were 23 times more likely to develop multicentric spread than were those with primary tumours located elsewhere ( $p=0.001$ ). To date therapy with Ukrain in this patient is a complete success and calls for further clinical studies.

### References

- (1) Nowicky J.W. *New immunostimulating anticancer preparation Ukrain*. 13th International Congress of Chemotherapy, Vienna, 28 August-2 September 1983, PS 12 5 33/A-6, part 288/57.
- (2) Nowicky J.W., Nowicky W., Liepins A. *Cytostatic and cytotoxic effects of Ukrain on malignant cells*. J. Chemother., 5 (Suppl. 1), 797-799, 1993.
- (3) Mamelak A.N. et al., *Treatment options and prognosis for multicentric juvenile pilocystic astrocytoma*. J. Neurosurg., 81, 24-30, 1994.

Note: The patient was treated with Ukrain in Vienna, Austria, by a physician. Full information was given about the kind of treatment and it was carried out with the parents' consent. The ethical rules were followed in accordance with the Helsinki Declaration.