THE ROLE OF LOCAL CHEMOTHERAPY IN CASE OF INSUFFICIENT TUMOR RESPONSE TO ORGAN-SAVING TREATMENT OF RETINOBLASTOMA (RB) IN CHILDREN.

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Background : Advances in the treatment of RB have led to increased survival rates of children with intraocular tumors what account for about 95%. Systemic chemotherapy in conjunction with conventional methods of local tumor destruction and even EBRT does not yield satisfactory results, when it is not possible to avoid enucleation for 30 - 39% of cases after attempts to save the eye. Increasing advanced RB and the development of refractory and recurrent tumors necessitates the improvement of the existing types of chemotherapy and locoregional treatment.

Objectives

To evaluate the outcome of 27 eyes, with recurrent or refractory Rb after intravenous chemotherapy (ICT) in combination with other techniques of focal tumor destruction and without, in a few cases after RT, using selective intra-arterial chemotherapy (SIAC) and/or intravitreal chemotherapy (IViC).

Previous treatment in 15 children with bilateral RB

n=1	TTT
n=6	ICT
n=2	ICT + TTT
n=1	ICT + TTT + cryo
n=1	ICT + brachy. IViC+enucl
n=1	ICT+ brachytherapy
n=1	ICT + TTT + RT
n=3	ICT + RT
n=1	ICT+SIAC
n=2	ICT+SIAC + TTT
n=1	CT+SIAC + IViC +TTT
n=1	ICT+SIAC+RT+IViC
n=1	ICT+IViC+ brachy
n=2	ICT+ enucleation
n=6	enucleation

♦ ICT from 3 to 22 courses (with a median number of courses 7)

n=4	Vcr/Carbo
n=6	VEC
n=3	CCE
n=1	Vcr/CPM/Carbo
n=1	Vcr/CPM

Previous treatment in 10 children with unilateral RB

n=3	ICT
n=3	ICT + brachy
n=1	ICT+SIAC
n=3	ICT+SIAC + IViC

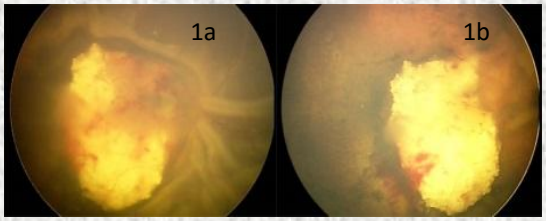
♦ ICT (from 3 to 12 courses (with a median number of courses 5).

n=4	Vcr/Carbo
n=6	VEC
n=3	CCE

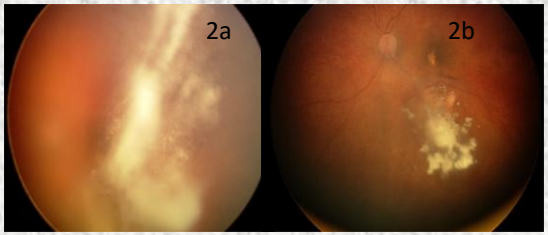
Methods

A retrospective study was conducted after local chemotherapy in 27 eyes of 25 patients in our clinic. SIAC was used as first option in cases with retinal or subretinal disease with or without vitreous seeding. IViC was used for isolated vitreous disease or for complementary treatment in eyes with partial vitreous seeding response to SIAC. Focal therapy was used as needed to consolidate treatment and in 2 cases was used RT. 27 eyes of 25 patients were treated. 2 (7.4%) eyes were treated with SIAC, 14 (51.9%) eyes with IViC and 11 (40.7%) eyes with both therapies. SIAC was used melphalan 2-7.5 mg ± topotecan 1 mg. The median infusions per eye were 2 (range 1-4). IViC was used melphalan 16-20 µg ± topotecan 20 µg. The median injections were 3 (range 2-5).

Recurrent RB after 12 VEC+ brachytherapy → **After 2 SIAC + 4 IViC melphalan**



Refractory vitreal RB after 3 VEC+1SIAC → After 9 IViC (melphalan-topotecan)



Results

At a median follow up of 23 months (range 9-57 months) all patients with unilateral Rb (n=10) and of 39 months (range 12-77 months) all patients with bilateral Rb (n=15) are alive with no metastatic disease. 25 of 27 eyes (85%) were preserved.

Conclusion

The use of both therapies SIAC and IViC as isolated modality or in combination to treat recurrent or refractory retinoblastoma showed successfully results in globe preservation.

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