

## COMBINED LAK-THERAPY AND WHOLE BODY HYPERTHERMIA IN PEDIATRIC CANCER TREATMENT

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**Objective.** The prognosis of patients (pts) with refractory and metastatic solid tumors is very poor. Experimental studies have shown enhancement of antitumor effect in case of combination hyperthermia, chemotherapy and immunotherapy with LAK-cells.

**Methods.** Eleven children (boys-9, girls-2, median age 12) with relapsed and refractory diseases have been treated with thermochemobiotherapy (totally 13 courses). There were rhabdomyosarcoma (RMS)-4, germ-cell tumors (GCT)-3, PNET-2, renal-cell carcinoma (RCC)-1 and mesenchymal liver tumor (MLT) -1 ) WBH, 42-43°C, 120-160 min was induced by 13,56 MHz electro-magnetic energy and carried out concurrently with hyperglycemia (20-26 mmol/l) and chemotherapy (depending on type of tumor) under general anesthesia. At the end of WBH session when temperature decreases to 40,5°C, LAK-cells ( $0,5-1,5 \cdot 10^9$  cells) obtained after lymphopheresis and incubation PBMC *in vitro* with IL-2 for 2-3 days, infused i.v. over 3-4 hours with IL-2 ( $0,25-0,5 \text{ MU/m}^2$ ). Second infusion of LAK-cells was given the next day without WBH. Two pts had 2 session of systemic thermochemobiotherapy.

**Results.** All the children well tolerated WBH as well as LAK-therapy. At the end of infusion LAK-cells usually we observed elevation of body temperature up to 39 °C due to IL-2. CR was achieved in two pts with GCT and PNET. PR was registered in 4 pts (RCC, RMS, PNET and MLT). SD-in 4 pts (GCT-2, RMS-2) and one child with disseminated and refractory RMS showed progression after systemic thermochemobiotherapy.

**Conclusion.** WBH combined with LAK-therapy is tolerable treatment and might be one of the approaches for overcoming chemotherapy resistance in refractory pts. The optimal choice of treatment in this poor prognostic group of pts still merits further investigation.