Effect of intensive nutrition intervention on pediatric patients with central nervous system tumors with concurrent chemo-radiotherapy

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Aims

Pediatric patients with central nervous system (CNS) tumors undergoing chemoradiotherapy are at high risk of malnutrition. The goal of this study was to investigate the effects of intensive nutrition intervention on the pediatric patients with CNS tumors receiving concurrent chemoradiotherapy.

Materials & methods

We analyzed retrospectively the clinical outcomes of 28 CNS tumor patients who received intensive nutritional intervention (nutrition intervention group, NG) before they were treated with chemoradiotherapy. The outcomes of these patients were compared to that of 39 patients who received chemoradiotherapy without any early nutritional intervention (control group, CG).

Results

There are no significant differences between two groups in hemoglobin, platelet, prealbumin, globulin, and albumin before they were treated with chemoradiotherapy. However, the white cell count in control group was larger than that in NG (6.07±1.35 vs. 8.87±5.10, p<0.05) (10^9/L). The body mass percentage (5.08±10.67 % vs. -0.49±5.41 %), white cell count (2.86±1.00 vs. 2.31±0.76) (10^9/L), hemoglobin count (120.20±39.701 vs. 100.62±14.44) (10^9/L) and platelet count (141.36±47.95 vs. 101.11±27.00) (10^9/L) in NG were higher than that in CG after they were treated with chemoradiotherapy. The radiotherapy interruption time (0.35±1.20 vs. 2.07±2.98 days) in NG were shorter than that in CG after they were treated with chemoradiotherapy.

Conclusions

- Early nutrition intervention can effectively improve the nutritional status of pediatric patients when they were treated with chemoradiotherapy.
- These results suggested that nutritional intervention must be initiated before chemoradiotherapy.