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J Transplant. 2011;2011:740673. Epub 2011 Apr 14.

High-dose chemotherapy with autologous hematopoietic stem-cell rescue for pediatric brain tumor patients: a single institution experience from UCLA.

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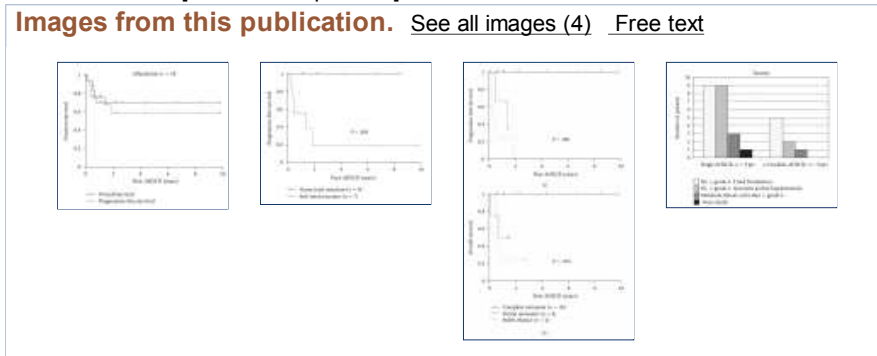
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Abstract

Background. Dose-dependent response makes certain pediatric brain tumors appropriate targets for high-dose chemotherapy with autologous hematopoietic stem-cell rescue (HDCT-AHSCR). **Methods.** The clinical outcomes and toxicities were analyzed retrospectively for 18 consecutive patients ≤ 19 y/o treated with HDCT-AHSCR at UCLA (1999-2009). **Results.** Patients' median age was 2.3 years. Fourteen had primary and 4 recurrent tumors: 12 neural/embryonal (7 medulloblastomas, 4 primitive neuroectodermal tumors, and a pineoblastoma), 3 glial/mixed, and 3 germ cell tumors. Eight patients had initial gross-total and seven subtotal resections. HDCT mostly consisted of carboplatin and/or thiotepa \pm etoposide ($n = 16$). Nine patients underwent a single AHSCR and nine ≥ 3 tandems. Three-year progression-free and overall survival probabilities were $60.5\% \pm 16$ and $69.3\% \pm 11.5$. Ten patients with pre-AHSCR complete remissions were alive/disease-free, whereas 5 of 8 with measurable disease were deceased (median followup: 2.3 yrs). Nine of 13 survivors avoided radiation. Single AHSCR regimens had greater toxicity than ≥ 3 AHSCR ($P < .01$). **Conclusion.** HDCT-AHSCR has a definitive, though limited role for selected pediatric brain tumors with poor prognosis and pretransplant complete/partial remissions.

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