

Ten Best Readings Relating to Sarcomas

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Marina N, Gebhardt M, Teot L, et al. Biology and therapeutic advances for pediatric osteosarcoma. *Oncologist*. 2004;9:422-441.

This paper describes current strategies for treating osteosarcoma as well as its clinical features, radiologic and diagnostic workup, and pathology.

Goorin AM, Schwartzenuber DJ, Devidas M, et al. Presurgical chemotherapy compared with immediate surgery and adjuvant chemotherapy for nonmetastatic osteosarcoma: Pediatric Oncology Group Study POG-8651. *J Clin Oncol*. 2003;21:1574-1580.

Chemotherapy was effective in both treatment groups, but there was no advantage in event-free survival for patients given presurgical chemotherapy.

Meyers PA, Schwartz CL, Krailo M, et al. Osteosarcoma: a randomized, prospective trial of the addition of ifosfamide and/or muramyl tripeptide to cisplatin, doxorubicin, and high-dose methotrexate. *J Clin Oncol*. 2005;23:2004-2011.

The addition of ifosfamide to standard chemotherapy did not enhance event-free survival. The addition of muramyl tripeptide to chemotherapy might improve event-free survival, but additional clinical and laboratory investigation are needed to explain the interaction between ifosfamide and muramyl tripeptide.

Ferrari S, Smeland S, Mercuri M, et al. Neoadjuvant chemotherapy with high-dose ifosfamide, high-dose methotrexate, cisplatin, and doxorubicin for patients with localized osteosarcoma of the extremity: a joint study by the Italian and Scandinavian Sarcoma Groups. *J Clin Oncol*. 2005;23:8845-8852. Epub 2005 Oct 24.

The addition of high-dose ifosfamide to methotrexate, cisplatin, and doxorubicin in the preoperative phase is feasible but causes major renal and hematologic toxicities and has survival rates similar to those obtained with four-drug regimens using standard-dose ifosfamide. The Italian Sarcoma Group/Scandinavian Sarcoma Group Study I showed that in a multicenter setting, more than 90% of patients with osteosarcoma of the extremity can undergo conservative surgery.

Bielack SS, Kempf-Bielack B, Delling G, et al. Prognostic factors in high-grade osteosarcoma of the

extremities or trunk: an analysis of 1,702 patients treated on neoadjuvant Cooperative Osteosarcoma Study Group protocols. *J Clin Oncol*. 2002;20:776-790.

Tumor site and size, primary metastases, response to chemotherapy, and surgical remission are of independent prognostic value in osteosarcoma.

Kolb EA, Kushner BH, Gorlick R, et al. Long-term event-free survival after intensive chemotherapy for Ewing's family of tumors in children and young adults. *J Clin Oncol*. 2003;21:3423-3430.

Intensive chemotherapy can result in sustained survival in children and young adults with locoregional Ewing's tumors, but it is relatively ineffective in the treatment of metastatic disease.

Bacci G, Forni C, Longhi A, et al. Long-term outcome for patients with non-metastatic Ewing's sarcoma treated with adjuvant and neoadjuvant chemotherapies: 402 patients treated at Rizzoli between 1972 and 1992. *Eur J Cancer*. 2004;40:73-83.

Local or systemic relapses, treatment complications, and second malignancies are more common after 5 years or more from the beginning of treatment in patients with nonmetastatic Ewing's sarcoma treated with adjuvant and neoadjuvant chemotherapy. Thus, long-term follow-up is mandatory for these patients.

Bernstein M, Kovar H, Paulussen M, et al. Ewing's sarcoma family of tumors: current management. *Oncologist*. 2006;11:503-519.

Approximately three quarters of patients have initially localized disease. About two thirds survive disease-free. Management, preferably at a specialist center with a multidisciplinary team, includes both local control (either surgery, radiation, or a combination) and systemic chemotherapy. Chemotherapy includes cyclic combinations, incorporating vincristine, doxorubicin, cyclophosphamide, etoposide, ifosfamide, and occasionally actinomycin D. Topotecan in combination with cyclophosphamide has shown activity. Patients with metastatic disease fare less well.

Schuetze SM. Utility of positron emission tomography in sarcomas. *Curr Opin Oncol*. 2006;18:369-373.

[18F]Fluoro-2-deoxy-D-glucose positron emission tomography will likely play increasingly important prognostic and predictive roles in the management of sarcomas. Available data suggest that positron-emission tomography is useful clinically in predicting response to therapy early in the course of treatment for both cytotoxic chemotherapy and kinase inhibitors.

Lee SJ, Schover LR, Partridge AH, et al. American Society of Clinical Oncology recommendations on fertility preservation in cancer patients. *J Clin Oncol.* 2006;24:2917-2931. Epub 2006 May 1.

Fertility preservation is often possible in people undergoing treatment for cancer. To preserve the full range of options, fertility preservation approaches should be considered as early as possible during treatment planning.