

Treatment of Recurrences Osteosarcoma

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Osteosarcoma accounts for 2% of all cancers in children aged 0-14 years and 3% of all cancers in adolescents aged 15-19 years. Most commonly diagnosed between the ages of 10 and 30, most of these diagnoses occur in teenagers [1]. However, osteosarcoma can be diagnosed at any age, including the elderly. About 10% of osteosarcomas are diagnosed in people over the age of 60. Osteosarcoma that has not responded to treatment or has recurred after the initial response to treatment is considered recurrence. Relapsed osteosarcoma occurs in 30-50% of patients with localized disease initially and 80% of patients with metastatic disease. The most common site for osteosarcoma to spread or metastasize is the lungs. The most common site of recurrence is also the lungs [2]. The long interval from the initial diagnosis to the onset of recurrence is associated with a better prognosis. In addition, patients with lung recurrence have a better prognosis than patients with other distant metastases because they may be cured if the cancer can be completely removed by surgery and subsequent chemotherapy [3]. Treatment consists of surgery, chemotherapy, or a combination of both. Multimodal treatment, or treatment using two or more techniques, is increasingly recognized as an important approach to increasing the chances of cure and prolonging the survival of a patient. In some cases, participating in clinical trials of new and innovative therapies may be the most promising therapies [4]. The circumstances specific to each patient's situation can affect how these general treatment principles apply and whether the patient chooses treatment. The potential benefits of multimodal care, participation in clinical trials, or standard of care should be carefully weighed against potential risks.

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Effective treatment of recurrent osteosarcoma requires both topical and systemic therapy. Topical therapy consists of surgery and is aimed at removing the primary osteosarcoma. Systemic therapy is a treatment that aims to eliminate cancer cells throughout the body and usually consists of chemotherapy [5]. Systemic therapy is required in addition to topical treatment to maximize the patient's chances of recovery. In fact, most patients with recurrent osteosarcoma have micrometastases that cannot be detected by current technology. Micrometastases are cancer cells that have spread beyond the area of the original cancer. The

presence of micrometastases can lead to recurrence of osteosarcoma after topical treatment with surgery alone. Therefore, systemic therapy is often required to treat undetectable micrometastases. Patients usually receive chemotherapy, subsequent surgery, and additional chemotherapy after surgery. A multimodal approach to treating osteosarcoma consists of general practitioners, orthopedic surgeons with experience with bone tumors, pathologists, radiation oncologists, pediatric oncologists, rehabilitation specialists, pediatric nurse specialists, social workers and more. Patients need to be treated by an interdisciplinary team. Experienced teams are most often found in specialized cancer centers that treat many patients with osteosarcoma. By including an interdisciplinary team in one of these centers, patients can receive optimal treatment, supportive care and rehabilitation.

One of the treatments developed to restore blood cell production in damaged bone marrow is autologous stem cell transplantation. This procedure involves injecting progenitor cells that may develop into more specific cells such as stem cells, white blood cells, red blood cells, and platelets. In autologous transplants, stem cells are taken from the patient prior to high-dose chemotherapy treatment. Cells are collected from bone marrow or peripheral blood, processed, frozen, and stored.

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