Adult Primary Bone Sarcoma (High-Grade)\(^1\)

NOTE: Consider Clinical Trials as treatment options for eligible patients.

The chemotherapy regimens recommended are intensified by both dose and schedule, which often requires the specialized monitoring and management provided at a comprehensive cancer center.

INITIAL EVALUATION

- History and Physical
- CBC, differential, platelets, total protein, albumin, calcium, total bilirubin, alkaline phosphatase, LDH, SGPT, sodium, potassium, chloride, CO\(_2\), and coagulation battery
- Plain films of primary
- CT of primary
- MRI of primary
- Bone Scan
- CXR and CT chest
- PET scan (exploratory)
- Core needle biopsy if not done outside
- Histology review by Bone Tumor Pathologist
- Screening MRI of Spine for small cell
- EKG and Cardiac Scan (MUGA or ECHO) if history of cardiac disease
- CVC
- Sarcoma Planning Conference

TREATMENTS

(NO: see page 3 for chemotherapy regimen references)

- Metastasis?
  - Yes
    - See Page 2
  - No
    - Small cell?
      - Yes
        - Doxorubicin, Ifosfamide and Vincristine for up to 6 cycles
      - No
        - Doxorubicin and Cisplatin for 4 cycles

- Resectable?
  - Yes
    - Surgery
  - No
    - Viable tumor?
      - Yes
        - Ifosfamide and Etoposide (total duration of therapy approximately 12 months)
      - No
        - 2-4 cycles of high dose Ifosfamide

- Radiation Therapy
  - Good response: greater than or equal to 95% necrosis
  - Less than 95% necrosis
    - Ifosfamide for 6 cycles then high dose Methotrexate for 6 cycles followed by ADIC\(^2\) as tolerated

SURVEILLANCE

- History and physical:
  - Every 3 months for 2 years then
  - Every 4 months for 2 years, then
  - Every 6 months for 1 year, then
  - Annually
- CBC, differential, platelets, total protein, albumin, calcium, glucose, creatinine, total bilirubin, alkaline phosphatase, LDH and SGPT every visit.
- Plain films of primary at each visit
- For pelvic primaries: MRI and X-ray each visit as H&P above
- Bone scan for symptomatic patients with history of bone metastases.
- CXR each visit as H&P above
- CT scan of chest if chest X-ray equivocal or for surgical planning.
- Sarcoma Planning Conference if further multidisciplinary decisions required.

1 Excluding Chondrosarcoma NOS, Osteosarcoma of Head & Neck
2 ADIC = doxorubicin and dacarbazine
Adult Primary Bone Sarcoma (High-Grade)\(^1\)

This practice algorithm has been specifically developed for MD Anderson using a multidisciplinary approach and taking into consideration circumstances particular to MD Anderson, including the following: MD Anderson’s specific patient population; MD Anderson’s services and structure; and MD Anderson’s clinical information. Moreover, this algorithm is not intended to replace the independent medical or professional judgment of physicians or other health care providers. This algorithm should not be used to treat pregnant women.

\(^1\)Small Cell includes the following: Rhabdomyosarcoma, Ewing Sarcoma/Primitive, Neuroectodermal Tumor, Mesenchymal Chondrosarcoma, and Unclassified Small Cell Sarcoma

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INITIAL EVALUATION

**SURVEILLANCE**

- History and physical:
  - Every 3 months for 2 years then
  - Every 4 months for 2 years, then
  - Every 6 months for 1 year, then
  - Annually
- CBC, differential and platelets annually.
- Total protein, albumin, calcium, glucose, creatinine, total bilirubin, alkaline phosphatase, LDH and SGPT every other visit for 5 years, then annually.
- Plain films of primary at each visit
- CT of primary at end of treatment for pelvic primaries.
- Bone scan for symptomatic patients with history of bone metastases.
- CXR each visit with H&P above
- CT chest if Chest X-ray equivocal or for surgical planning.
- Sarcoma Planning Conference if further multidisciplinary decisions required.

(TREATMENTS)

(\(\text{NOTE: see page 3 for chemotherapy regimen references}\))

\begin{itemize}
  \item \text{Metastases}\n  \item Yes
  \item Doxorubicin, Ifosfamide, and Vincristine for up to 6 cycles
  \item Surgery for primary or metastases or radiation therapy
  \item Post-Op Chemotherapy: Ifosfamide and Etoposide (total duration of therapy approximately 12 months)
  \item Surgery for primary or metastases or radiation therapy

  \item No
  \item Doxorubicin and Cisplatin for 4 cycles
  \item Surgery for primary or metastases
  \item Doxorubicin, Ifosfamide and high dose Methotrexate
  \item Surgery for primary or metastases
\end{itemize}
NOTE: Consider Clinical Trials as treatment options for eligible patients.
The chemotherapy regimens recommended are intensified by both dose and schedule, which often requires the specialized monitoring and management provided at a comprehensive cancer center.

SUGGESTED READINGS

**Adriamycin/cisplatin for osteosarcoma:**


**Adriamycin/ifosfamide for osteosarcoma and soft-tissue sarcomas:**

**High-dose ifosfamide for BONE and SOFT-TISSUE sarcoma:**
Adult Primary Bone Sarcoma (High-Grade)¹

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DEVELOPMENT CREDITS

This practice consensus algorithm is based on majority expert opinion of the Sarcoma Center Faculty at the University of Texas MD Anderson Cancer Center. It was developed using a multidisciplinary approach that included input from the following medical, radiation and surgical oncologists.

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