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## **Everolimus (Afinitor)**

Patient MRN: 7543897

Patient DOB: 08-10-2004 (20yo)

Patient Sex: M

## **OUTPATIENT CLINIC NOTE**

### **HPI:**

Aiden is a 20yo M with PMH high-grade osteosarcoma (diagnosed March 1, 2024) s/p chemotherapy, surgical resection (May 1, 2024), and adjuvant therapy, presenting to review follow-up imaging results. Aiden also presents with left thigh pain at the site of prior resection as well as non-productive cough and fatigue for the last 2 weeks.

### **Prior Treatment Timeline**

#### **Step 1: Neoadjuvant Chemotherapy**

Aiden was started on a standard neoadjuvant chemotherapy regimen to shrink the tumor before surgery.

- **Chemotherapy Regimen:**
  - Doxorubicin: 75 mg/m<sup>2</sup> IV every 21 days
  - Cisplatin: 120 mg/m<sup>2</sup> IV every 21 days
  - Methotrexate: 12 g/m<sup>2</sup> IV once every 14 days (high-dose)
- **Treatment Schedule:**
  - Cycle 1: March 10, 2024
  - Cycle 2: March 31, 2024
  - Cycle 3: April 21, 2024

**Total Duration: 3 cycles over 6 weeks.**

#### **Step 2: Surgical Resection**

- **Surgery Date:** May 1, 2024
- **Procedure:** Limb-sparing surgery to remove the distal femur and surrounding tissues, followed by placement of a prosthetic implant.

#### **Step 3: Post-Surgery Chemotherapy**

After recovery from surgery, Aiden was started on adjuvant chemotherapy to minimize the risk of recurrence.

- **Chemotherapy Regimen:**

- Doxorubicin: 37.5 mg/m<sup>2</sup> IV every 21 days (lower dose)
- Cisplatin: 90 mg/m<sup>2</sup> IV every 21 days
- Methotrexate: 12 g/m<sup>2</sup> IV once every 14 days (high-dose)
- Ifosfamide: 9 g/m<sup>2</sup> IV every 21 days, with Mesna for bladder protection

- **Treatment Schedule:**

- Cycle 1: May 22, 2024
- Cycle 2: June 12, 2024
- Cycle 3: July 3, 2024
- Cycle 4: July 24, 2024
- Cycle 5: August 14, 2024
- Cycle 6: September 4, 2024

**Total Duration: 6 cycles over 12 weeks.**

## **Summary of Treatment**

- **Neoadjuvant Therapy: March 10, 2024 – April 21, 2024**
  - Doxorubicin, Cisplatin, Methotrexate (3 cycles).
- **Surgery: May 1, 2024**
  - Limb-sparing surgery.
- **Adjuvant Therapy: May 22, 2024 – September 4, 2024**
  - Doxorubicin, Cisplatin, Methotrexate, Ifosfamide (6 cycles).

## **Review of Systems:**

**General:** Negative for fever, pallor. **Positive for fatigue**

**Skin:** Negative for rashes

**Head, Eyes, Ears, Nose, Throat (HEENT):** Negative for headache, vision changes, nasal congestion, rhinorrhea, sore throat.

**Cardiovascular:** Negative for chest pain, palpitations

**Respiratory:** **Positive for cough**, negative for shortness of breath, wheezing.

**Gastrointestinal:** Negative for abdominal pain, nausea, vomiting.

**Genitourinary:** Negative for dysuria, frequency, urgency, hematuria.

**Musculoskeletal:** **Positive for left thigh/knee pain**

**Neurological:** Negative for seizures, weakness, numbness.

**Endocrine:** Negative for heat/cold intolerance, excessive thirst or urination, changes in appetite.

**Hematologic:** Negative for rashes, bruises, petechiae or purpura

**Vitals:****HR 100 bpm****BP 110/70 mmHg****RR: 25 bpm****Temp: 98.7°F (37°C)****Physical Exam****General Appearance:** Appears tired but alert**Skin:** Slight pallor present, no rashes or bruises**Head:** Normocephalic, atraumatic.**Eyes:** Pupils equal, round, reactive to light; conjunctivae clear.**Ears:** External ears normal; tympanic membranes intact**Nose:** Nasal passages clear; no discharge.**Throat:** Oral mucosa moist; tonsils non-enlarged, no erythema.**Cardiovascular:** Normal rate, regular rhythm; no murmurs, gallops, or rubs.**Respiratory:** Clear bilaterally, no wheezing or crackles. No use of accessory muscles, unlabored breathing.**Gastrointestinal:** Abdomen soft, non-tender, no distension; bowel sounds present. No hepatosplenomegaly.**MSK:** Palpable mass just above knee joint, tenderness to palpation**Neurological:** Alert, oriented. At baseline.**Assessment:**

Aiden is a 20yo M with PMH high-grade osteosarcoma (diagnosed March 1, 2024) s/p chemotherapy, surgical resection (May 1, 2024), and adjuvant therapy, who presents with symptoms and imaging results indicative of recurrence of disease in the left distal femur as well as new lesions in the lungs on chest CT suggestive of metastatic disease. Aiden's LDH and ferritin also suggest high tumor burden. Given Aiden's severity of illness and lack of response to all past therapies, he will require initiation of a new adaptive treatment strategy.

**Plan:**

Recommend the initiation of mTOR inhibitor therapy, specifically everolimus (Afinitor), in conjunction with an MKI (sorafenib) as part of a clinical trial for recurrent osteosarcoma.

Start with **5 mg/m<sup>2</sup> of Afinitor** once daily and **200 mg/m<sup>2</sup> of Nexavar** twice daily.