

OUTCOMES OF METHOTREXATE-BASED THERAPY FOR PEDIATRIC OSTEOSARCOMA: A DECADE OF EXPERIENCE FROM A CANCER CENTER IN PAKISTAN

Duraksh Arshad¹, Muhammad Osama², Haleema Saeed¹, Ilyas Rafi², Saliha Sarfraz¹, Irfana Ishaq Sindhu¹, Usman Hassan³, Alina Sadaf¹

¹Department of Paediatric Oncology, Shaukat Khanum Memorial Cancer Hospital and Research Centre (SKMCH&RC), Lahore, Pakistan, ²Department of Surgical Oncology, SKMCH&RC, Lahore, Pakistan, ³Department of Pathology, SKMCH&RC, Lahore, Pakistan

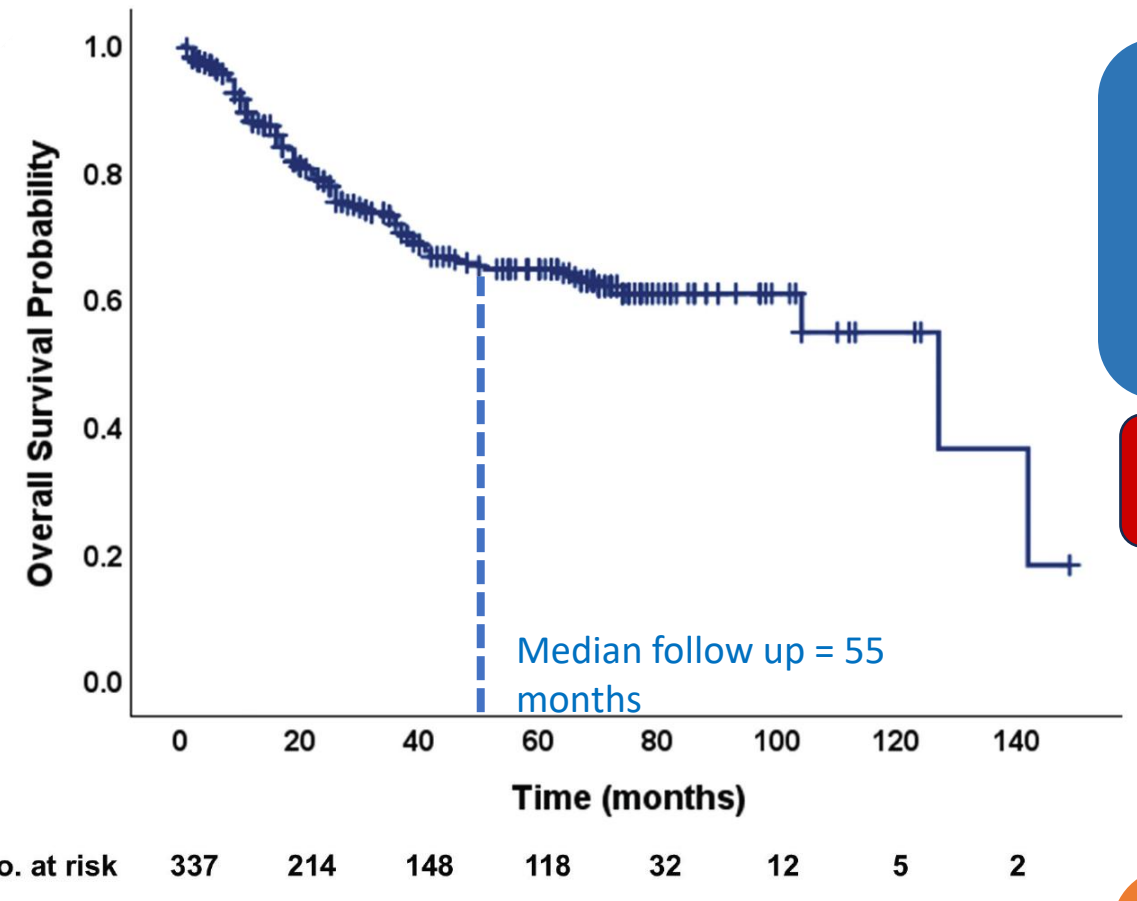
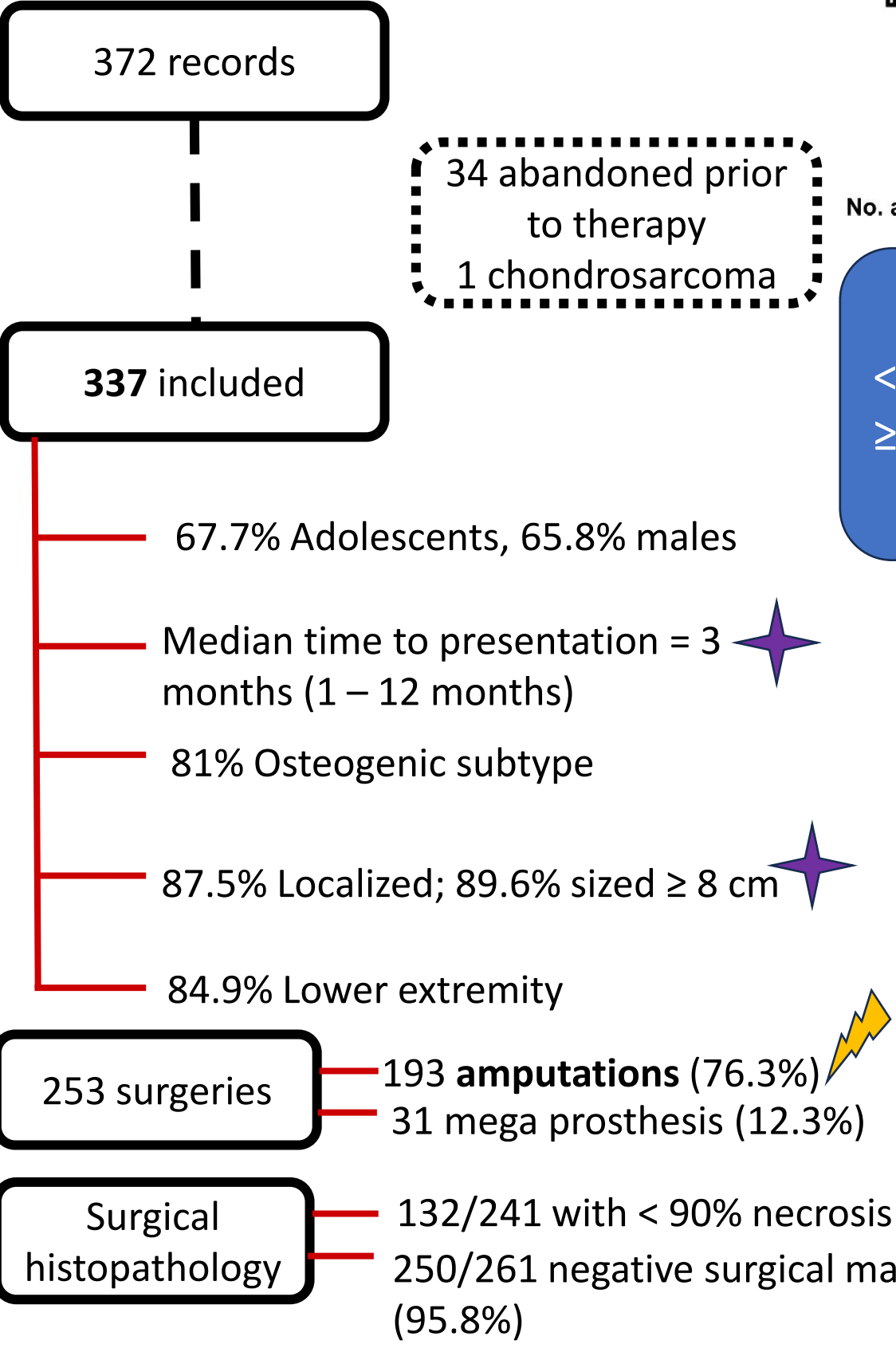
BACKGROUND & AIMS

Osteosarcoma is the most common bone malignancy in children. We aimed to report the **3-, 5-, and 10-year overall survival (OS) and event-free survival (EFS) outcomes** for paediatric osteosarcoma patients treated with a **methotrexate-based treatment regimen (per EURAMOS 1)** at a tertiary care cancer centre in LMIC. Secondary objectives were to identify factors associated with poor survival.

METHODS

- Retrospective review
- 1st January 2011 to 31st December 2020
- Follow-up through 12th March 2026
- EFS included **treatment abandonment**

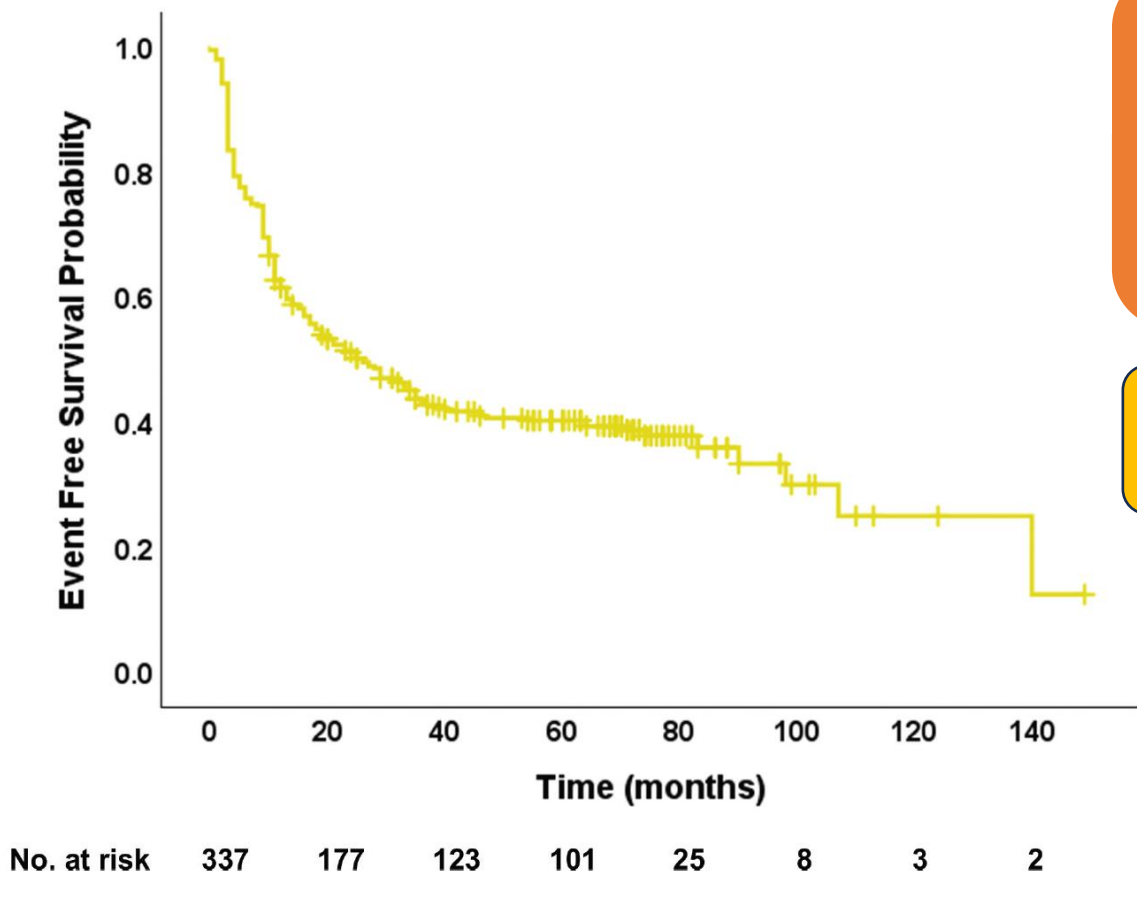
RESULTS



OS (95% CI)
3-yr: 72% (67 – 78)
5-yr: 65% (59 – 71)
10-yr: 55% (44 – 69)

100 DEATHS

- 75 disease progression
- 18 infection related
- 7 cardiotoxicity



EFS (95% CI)
3-yr: 43% (39 – 49)
5-yr: 40% (35 – 46)
10-yr: 25% (16 – 40)

76 ABANDONED

- 34 prior to therapy
- 42 on active treatment

5-yr OS (95% CI)
< 90% necrosis = 61% (54 – 72)
≥ 90% necrosis = 78% (70 – 87)
p=0.006

≥ 90% necrosis independently associated with improved OS
HR 0.49 (95% CI 0.29 – 0.83)
p=0.008

CONCLUSIONS

5-yr OS less than EURAMOS 1 (71% [95% CI 68–73])

- OS comparable to LMIC (range 47 – 83%)*
- Larger tumors, delayed presentation
- Higher mortality due to infections and cardiotoxicity

5-yr EFS less than EURAMOS 1 (54% [95% CI 52–56])

- Abandonment included in EFS in our study but not in EURAMOS 1
- Abandonment may be linked to higher rates of amputations but needs to be studied

Correspondence: Dr. Alina Sadaf

✉ alinasadaf@skm.org.pk

☎ +92-42-35905000

*Ariello K.. JCO Glob Oncol.2025

