

Introduction

- Rhabdomyosarcoma (RMS) is the most common pediatric soft tissue sarcoma, with a slight male predominance and variable presentation by site.
- Orbital RMS, the leading orbital malignancy in children, usually appears before 16 years with proptosis, eyelid swelling.
- Though metastasis is uncommon, untreated cases may spread to lung, bone, or marrow. Prognosis depends on stage, histology, and age.
- This study evaluates the clinical characteristics, treatment, and survival outcomes of pediatric orbital RMS at Indus Hospital, Karachi.

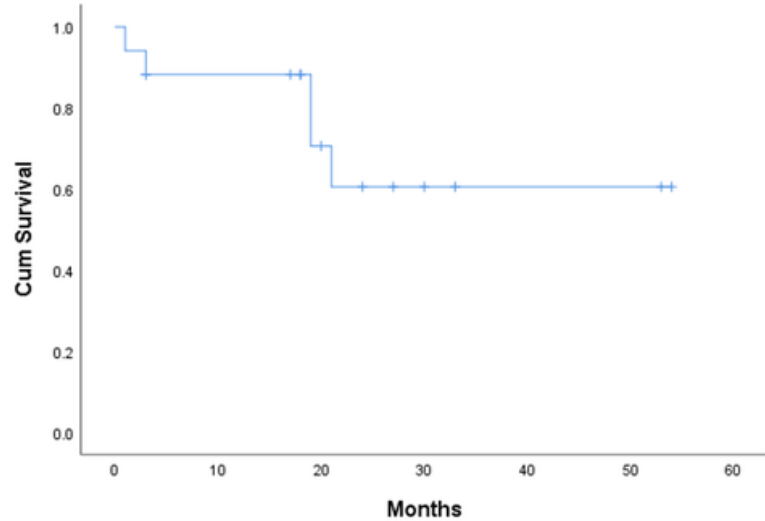
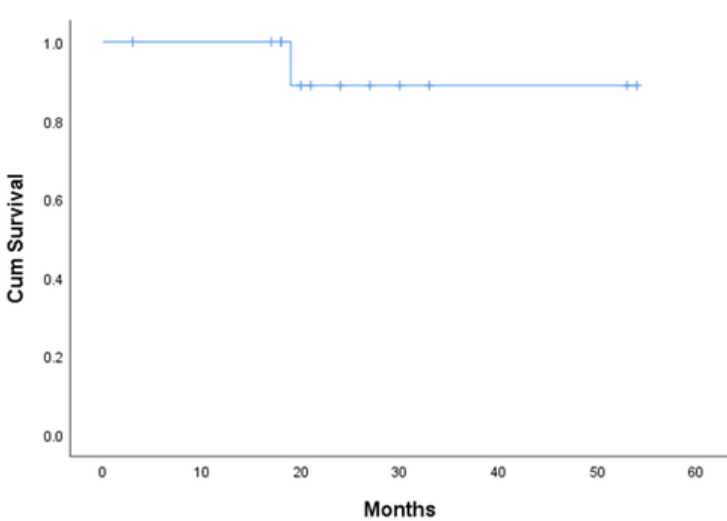
Materials and Methods

- This retrospective study includes patients aged 0–16 years diagnosed with Orbital RMS at the Indus Hospital and Health Network, Karachi, between January 2014 and December 2023.
- Patient demographics, treatment protocols and outcomes were retrieved from electronic medical records.
- Statistics was performed using SPSS v26.O, with descriptive, Kaplan–Meier was used for Survival analysis.

Results

- Seventeen children with orbital rhabdomyosarcoma were analyze (median age 9 years). Swelling was the most common presentation.
- Most tumors were localized, with minimal bone destruction.
- Multimodal therapy with VAC chemotherapy and radiotherapy was delivered to most patients with local control at the end of cycle three.
- Three patients abandoned treatments (18%).
- Among treated patients, one relapse (7%) and one death (7%) occurred, resulting in an overall survival 86% (12/14) and event-free-survival of 71% (12/17), highlighting excellent outcomes with treatment completion.

Histopathology, Treatment Characteristics, and Radiologic Response in Children with Orbital Rhabdomyosarcoma		
Parameter	Category / Description	N (%) / Details
Histological diagnosis	Embryonal	15 (88%)
	FOXO1-negative alveolar	1 (6%)
	Spindle cell	1 (6%)
Residual enhancement on imaging	End-of-treatment CT/MRI showed residual enhancement	12 patients
	Follow-up imaging at 6 months demonstrated interval reduction of enhancement	08/12 patients
Chemotherapy	Patients completing chemotherapy	14
	Regimen and duration	VAC, 8–14 cycles
Radiation therapy	Patients receiving radiotherapy	14
	Dose and fractionation	50.4 Gy in 28 fractions



Treatment Outcomes of Pediatric Orbital Rhabdomyosarcoma	
Outcome	NO. (%) Total: 17 (100%)
Local Tumor Outcome	
Regression	0
Residual enhancement	12 (70.5)
Recurrence	01 (6.0)
Progressive disease	0
Regional Outcome	
No Lymph node spread	17 (100)
Lymph node spread	0
Systemic Outcome	
No distant metastasis	17 (100)
Distant Metastasis	0
Final Status	
Alive	16 (94)
Died	01 (06)

Conclusion

- Multimodal therapy was effective in the treatment of pediatric orbital rhabdomyosarcoma with good survival.
- Patients who could be treated with curative intent had good outcomes, with high disease-free survival.
- Treatment abandonment, however, was frequent and continues to be a challenge, and recognizing the need to make interventions that facilitate the adherence process and complete treatment.