

# **Different Pathological Types of Adult Prostate Sarcoma were Associated with Distinctive Prognosis: Experience of a High-volume Center in China**

**Rui Chen**

**Department of Urology, Shanghai Changhai Hospital,  
Second Military Medical University, Shanghai, China**



# Background

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- Prostate sarcoma is an extremely rare and highly aggressive neoplasm. Owing to its rarity, **knowledge of the clinical features, management, and prognosis are lacking**. It has primarily been derived from case reports, small institutional series, and counterparts of other genitourinary sites.
- *Materials and Methods*: The medical records of **39 adult patients** from January 2000 to March 2017 **with a diagnosis of primary prostate sarcoma were retrieved**.
- Univariate and multivariate Cox regression analysis were applied to identify the predictors of overall survival (OS) and progression-free survival (PFS).

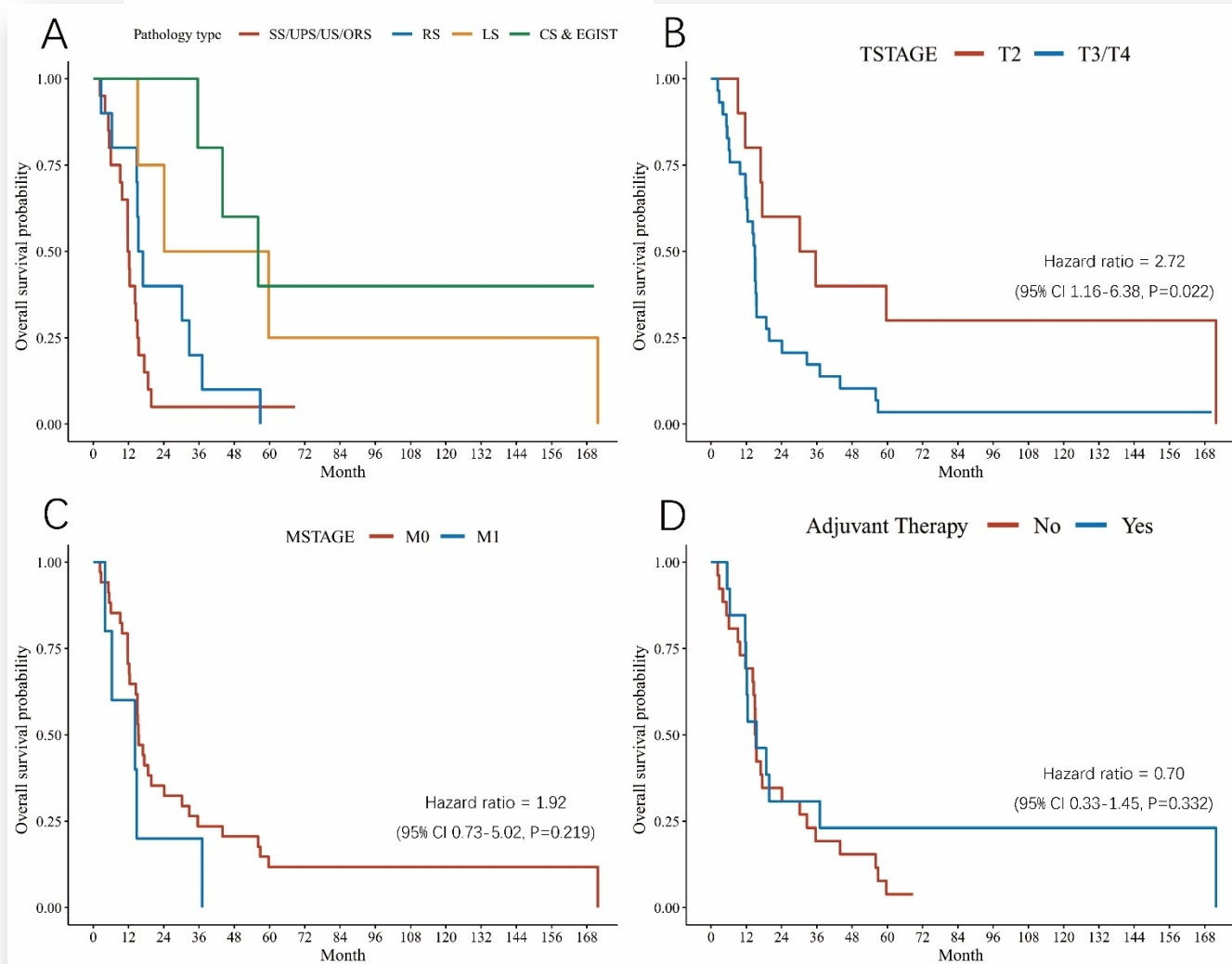
# Results

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- The most common histological type was rhabdomyosarcoma (10 cases, 25.6%).
- Patients were divided into 4 pathological groups based on prognosis:
  - I. carcinosarcoma and extra-gastrointestinal stromal tumor (EGIST);
  - II. leiomyosarcoma;
  - III. rhabdomyosarcoma;
  - IV. stromal sarcoma, undifferentiated pleomorphic sarcoma, unclassified sarcomas and other rare sarcomas (SS/UPS/US/ORS).
- The median OS for each group was 56.1, 41.9, 16.2 and 12.0 months, respectively.

# Kaplan-Meier analysis of overall survival

Patients with different pathology types (A), clinical T stages (B), clinical M stages (C) and with or without adjuvant therapy (D)



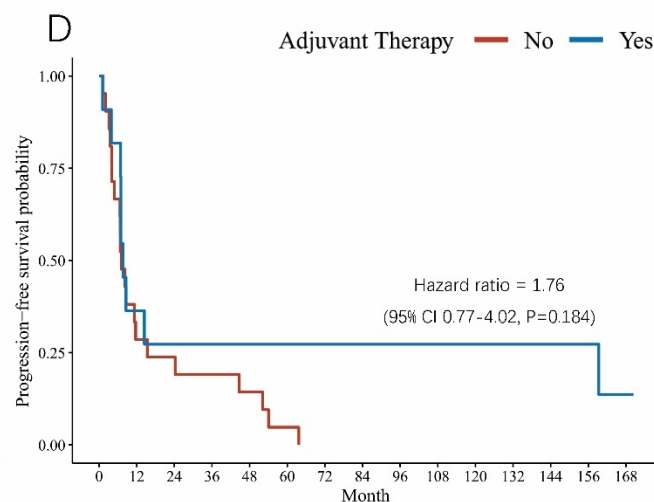
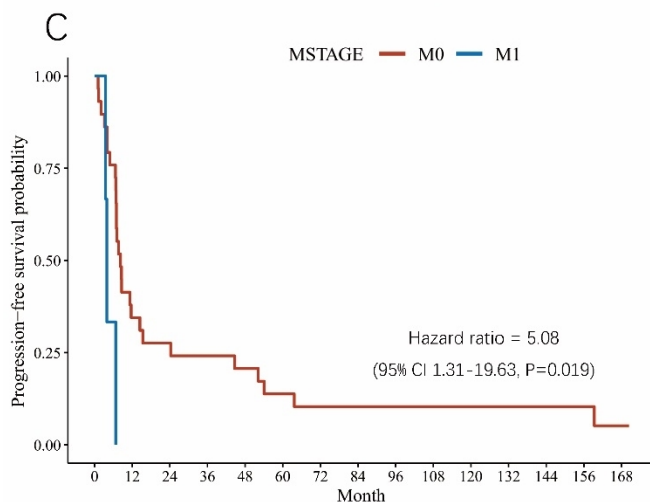
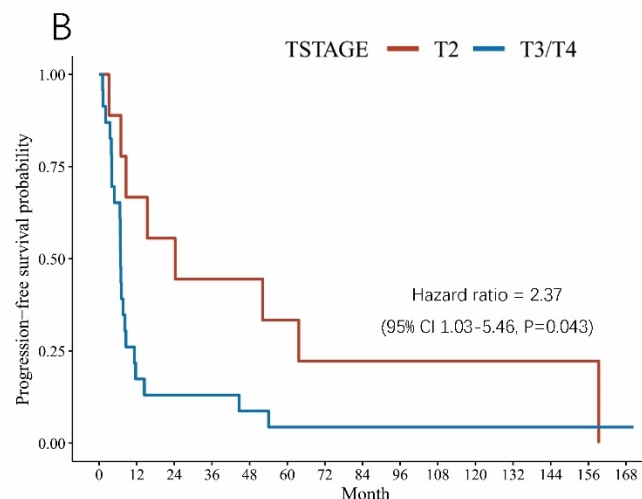
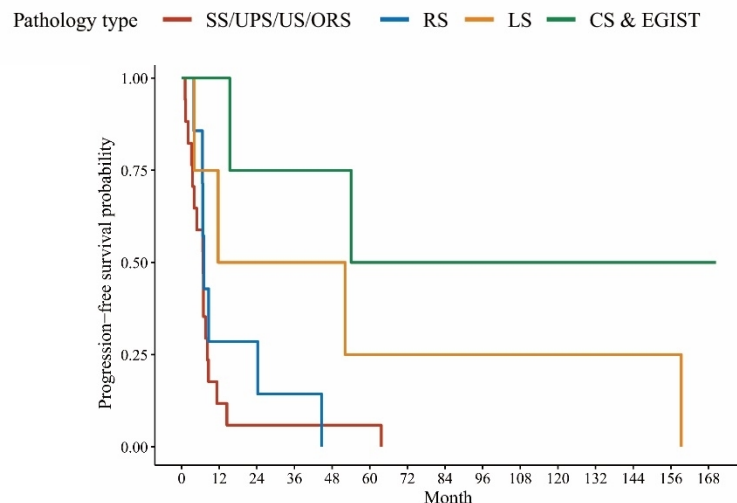
# Pathological types and clinical T stage predict OS

**Multivariate Cox regression revealed that advanced clinical T stage and pathological type were associated with OS.**

Variables	Overall Survival			
	Univariate		Multivariate	
	HR (95% CI)	P value	HR (95% CI)	P value
Age	1.00 (0.98 - 1.02)	0.688	-	-
PSA	1.00 (0.93 - 1.07)	0.975	-	-
<b>T stage (T3/T4 vsT2)</b>	<b>2.72 (1.16 - 6.38)</b>	<b>0.022</b>	<b>3.09 (1.19 - 8.07)</b>	<b>0.020</b>
M stage (M1 vs M0)	1.92 (0.73 – 5.02)	0.219		
Pathological Grade (2 vs 3)	0.23(0.032 - 1.72)	0.070		
<b>Pathological Type (vs CS&amp; EGIST)</b>				
SS/UPS/US/ORS	7.09 (2.00 – 25.06)	0.002	8.84 (2.36 – 33.14)	<b>0.001</b>
RS	3.87 (1.04 - 14.37)	0.043	3.75 (1.01 – 13.97)	<b>0.049</b>
LS	1.55 (0.03 -7.69)	0.595	2.48 (0.47 – 13.14)	0.287
Adjuvant Therapy (Yes vs No)	0.70 (0.33 - 1.45)	0.332		
Surgical Margin (R2 vs R0/R1)	1.22 (0.62 - 2.41)	0.562		
Tumor Maximum Dimension (vs <5cm)	1.02 (0.98 - 1.18)	0.745		

PSA, prostate specific antigen; HR, hazard ratio; CI, confidence interval; CS, carcinosarcoma; EGIST, extra-gastrointestinal stromal tumor; SS, stromal sarcoma; UPS, undifferentiated pleomorphic sarcoma; US, unclassified sarcomas; ORS, other rare sarcomas (synovial sarcoma, primitive neuroectodermal tumor and malignant peripheral nerve sheath tumor); RS, rhabdomyosarcoma, LS, leiomyosarcoma.

# Pathological types and clinical T stage predict PFS



Patients with **SS/UPS/US/ORS** (HR 9.40,  $p = 0.003$ ) and **rhabdomyosarcoma** (HR 3.80,  $p = 0.027$ ) had shorter progression-free survival compared with carcinosarcoma and EGIST.

# Conclusions

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- **Pathological types of prostate sarcoma were associated with distinctive prognosis.**
- **Such information may be helpful for urologist when handling this rare malignancy.**