

**Table S1** Demographic and clinical characteristics of the patients in the SEER database

Characteristics	All patients (N=96,497)	M0 (N=93,495)	M1 (N=3,002)	P value
Age (years)				<0.001*
<45	405 (0.42)	396 (0.42)	9 (0.30)	
45–59	22,778 (23.60)	22,298 (23.85)	480 (15.99)	
60–75	58,996 (61.14)	57,480 (61.48)	1,516 (50.50)	
≥75	14,318 (14.84)	13,321 (14.25)	997 (33.21)	
Race				0.001*
White	73,549 (76.22)	71,345 (76.31)	2,204 (73.42)	
Black	15,380 (15.93)	14,852 (15.85)	528 (17.59)	
Others^	7,568 (7.84)	7,298 (7.81)	270 (8.99)	
T stage				<0.001*
T1	40,869 (42.35)	39,861 (42.63)	1,008 (33.58)	
T2	42,122 (43.65)	40,965 (43.82)	1,157 (38.54)	
T3	11,807 (12.24)	11,348 (12.14)	459 (15.29)	
T4	1,699 (1.76)	1321 (1.41)	378 (12.59)	
N stage				<0.001*
N0	93,257 (96.64)	91,098 (97.44)	2,159 (71.92)	
N1	3,240 (3.36)	2,397 (2.56)	843 (28.08)	
Gleason score				<0.001*
≤5	143 (0.15)	143 (0.15)	0	
6	35,614 (36.90)	35,554 (38.03)	60 (1.99)	
7	41,131 (42.62)	40,681 (43.51)	450 (15.00)	
8	10,618 (11.00)	9,875 (10.56)	743 (24.75)	
9	8,093 (8.39)	6,623 (7.08)	1,470 (48.97)	
10	898 (0.93)	619 (0.66)	279 (9.29)	
PSA (ng/mL)				<0.001
<10	67,706 (70.16)	67,399 (72.09)	307 (10.23)	
10–19	17,259 (17.89)	16,888 (18.06)	371 (12.36)	
20–49	6,942 (7.19)	6,378 (6.82)	564 (18.79)	
50–99	2,130 (2.21)	1,734 (1.85)	396 (13.19)	
≥100	2,460 (2.55)	1,096 (1.17)	1,364 (45.44)	

^, others: American Indian/AK Native, Asian/Pacific Islander. M0, non-bone metastasis; M1, bone metastasis; N0, regional (pelvic) lymph node negative; N1, regional (pelvic) lymph node positive. Significant values were marked in bold. Abbreviations: PSA, prostate specific antigen.



**Figure S1** Chi-squared test to evaluate the different rates of bone metastasis in PCa patients with different primary histological grades. (A) Comparison of bone metastasis rate in the SEER database. The data in the parentheses represented the rate of bone metastasis, the data in the green forms represented the Chi-squared values. (B) Comparison of bone metastasis rate in PCa patients with different Gleason scores at our center. The data in the parentheses represented the rate of bone metastasis and the data in the green forms represented the Chi-squared values. (C) Comparison of bone metastasis rate in PCa patients with different primary Gleason scores at our center. 7A represented Gleason score =3+4, 7B represented Gleason score =4+3, 8A represented Gleason score =3+5, 8B represented Gleason score =4+4, 8C represented Gleason score =5+3, 9A represented Gleason score =4+5, 9B represented Gleason score =5+4. M stages: stage of bone metastasis including M0 and M1. \*,  $P < 0.05$ ; \*\*,  $P < 0.01$ ; \*\*\*,  $P < 0.001$ . M0, non-bone metastasis; M1, bone metastasis; GS, Gleason score; PCa, prostate cancer.