

Effect of African-American race on cancer specific mortality differs according to clear-cell vs. non-clear cell histologic subtype in metastatic renal cell carcinoma

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Introduction & Objectives: Potential effect of race defined, as African-American vs. Caucasian, was never examined in the setting of cancer specific mortality (CSM) in clear cell vs. non-clear cell metastatic renal cell carcinoma (ccmRCC vs. non-ccmRCC). To test the effect of African-American race on CSM in ccmRCC and non-ccmRCC.

Materials & Methods: Within Surveillance, Epidemiology and End Results registry (2001-2014), we identified patients with ccmRCC and non-ccmRCC. We relied on propensity score (PS) matching to reduce the effect of inherent differences between African-American vs. Caucasian patients. After PS matching that included access to cytoreductive nephrectomy, cumulative incidence, competing-risks regression (CRR) models and landmark analyses tested the effect of race on CSM.

Results: Before PS matching, African-American patients accounted for 7.0 and 24.5% of respectively ccmRCC (N=6742) and non-ccmRCC patients (N=766). After PS matching, African-American patients accounted for 22.3 and 33.5% of respectively ccmRCC (N= 2050) and non-ccmRCC (N= 391) matched cohorts. In multivariable CRR models focusing on ccmRCC, higher CSM was recorded in African-Americans (HR:1.27, p<0.001). Conversely, in non-ccmRCC, lower CSM was recorded in African-Americans (HR:0.54, p<0.001). Landmark analyses rejected the hypothesis of immortal bias.

Demographic and pathological characteristics of patients with metastatic renal cell carcinoma after propensity-score matching stratified according to race								
Variables names No of patients (%)	Clear-Cell Metastatic Renal Cell Carcinoma				Non Clear-Cell Metastatic Renal Cell Carcinoma			
	Overall (N=2050)	After propensity-score matching		<i>P-value</i>	Overall (n=391)	After propensity-score matching		<i>P-value</i>
		African-American (N=457, 22.3%)	Caucasian (N=1593, 77.7%)		African-American (n=131, 33.5%)	Caucasian (n=260, 66.5%)		
Age group				1.0				0.4
≤ 65	1391 (67.9)	311 (68.1)	1080 (67.8)		261 (66.8)	92 (70.2)	169 (65)	
> 65	659 (32.1)	146 (31.9)	513 (32.2)		130 (33.2)	39 (29.8)	91 (35)	
Year at diagnosis				0.6				0.5
2001-2005	488 (23.8)	116 (25.4)	372 (23.4)		60 (15.3)	23 (17.6)	37 (14.2)	
2006-2009	650 (31.7)	144 (31.5)	506 (31.8)		98 (25.1)	35 (26.7)	63 (24.2)	
2010-2014	912 (44.5)	197 (43.1)	715 (44.9)		233 (59.6)	73 (55.7)	160 (61.5)	
Gender				0.3				0.8
Male	1431 (69.8)	309 (67.6)	1122 (70.4)		317 (81.1)	105 (80.2)	212 (81.5)	
Female	619 (30.2)	148 (32.4)	471 (29.6)		74 (18.9)	26 (19.8)	48 (18.5)	
Marital status				0.2				0.3
Married	1045 (51)	214 (46.8)	831 (52.2)		243 (62.1)	74 (56.5)	169 (65.0)	
Never Married	483 (23.6)	119 (26)	364 (22.8)		62 (15.9)	26 (19.8)	36 (13.8)	
Previously Married	465 (22.7)	109 (23.9)	356 (22.3)		80 (20.5)	28 (21.4)	52 (20.0)	
Unknown	57 (2.8)	15 (3.3)	42 (2.6)		6 (1.5)	3 (2.3)	3 (1.2)	
T-stage				0.9				0.4
T ₁₋₂	640 (31.2)	146 (31.9)	494 (31)		160 (40.9)	57 (43.5)	103 (39.6)	
T ₃₋₄	889 (43.4)	194 (42.5)	695 (43.6)		164 (41.9)	49 (37.4)	115 (44.2)	
T _{≥0}	521 (25.4)	117 (25.6)	404 (25.4)		67 (17.1)	25 (19.1)	42 (16.2)	
Grade				0.8				0.4
G ₁₋₂	406 (19.8)	95 (20.8)	311 (19.5)		67 (17.1)	27 (20.6)	40 (15.4)	
G ₃₋₄	797 (38.9)	173 (37.9)	624 (39.2)		161 (41.2)	49 (37.4)	112 (43.1)	
Unknown	847 (41.3)	189 (41.4)	658 (41.3)		163 (41.7)	55 (42.0)	108 (41.5)	
Therapy				0.5				0.8
No surgery	976 (47.6)	224 (49)	752 (47.2)		129 (33)	45 (34.4)	84 (32.3)	
Surgery	1074 (52.4)	233 (51)	841 (52.8)		262 (67)	86 (65.6)	176 (67.7)	

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