

Supplementary Material

Table S1.Characteristics of participants.

Table S2. Baseline characteristics of patients included in the analysis before and after PSM

Table S3. Univariate and multivariate Cox analysis of all-cause mortality

Figure S1. ROC Curves for the 3-year (A), 5-year (B), and 10-year (C) Prognosis Based on RAR Nomograms

Table S1.Characteristics of participants.

Characteristics	Total (n = 21452)	No cancer (n = 19542)	Cancer (n = 1910)	P
Age, M (Q ₁ , Q ₃)	45 [32, 59]	44 [31, 56]	64 [53, 73]	<0.001
Sex, n (%)				<0.001
Male	10280 (48.1)	9422 (48.8)	858 (41.7)	
Female	11172 (51.9)	10120 (51.2)	1052(58.3)	
Race/ethnicity, n (%)				<0.001
Non-Hispanic				
White	9723(70.1)	8356(68.2)	1367 (88.0)	
Non-Hispanic				
Black	4317 (10.3)	4079 (10.9)	238 (4.4)	
Other race	7412 (19.6)	7107 (20.9)	305 (7.6)	
Education level, n (%)				<0.001
Below high school	4657 (14.0)	4331(14.5)	326 (9.6)	
High school	4755 (21.3)	4346 (21.5)	409(19.0)	
Above high school	12040 (64.7)	10865 (64.0)	1175 (71.4)	
Marital status, n (%)				0.185
Married/living with partner	12881 (64.1)	11723(63.9)	1158(65.7)	

Single/divorced/ widowed	8571 (35.9)	7819 (36.1)	752(34.3)	
Family PIR, n (%)				<0.001
≤ 1.0	6397 (19.8)	5972 (20.5)	425(13.6)	
1.1–3.0	7943(34.8)	7192 (34.9)	751 (34.7)	
> 3.0	7112 (45.3)	6378 (44.7)	734 (51.7)	
Smoking status, n (%)				<0.001
No	12274 (57.0)	11358 (57.9)	916 (48.7)	
Yes	9178 (43.0)	8184 (42.1)	994(51.3)	
BMI(kg/m2), n (%)				0.436
< 25	6395 (31.1)	5854(31.2)	541 (30.1)	
25–30	7107 (33.4)	6436 (33.2)	671 (35.0)	
> 30	7950 (35.5)	7252 (35.6)	698 (34.9)	
Drinking status, n (%)				0.31
No	3402 (12.0)	3117 (12.1)	285 (11.2)	
Yes	18050 (88.0)	16425 (87.9)	1625 (88.8)	
Physical activity, n (%)				<0.001
Inactive	12073 (52.2)	10973 (52.1)	1100 (53.2)	
Moderate	3564 (18.9)	3179 (18.5)	385 (23.3)	
Vigorous	5815 (28.9)	5390 (29.5)	425 (23.4)	
Hypertension, n (%)				<0.001
No	10483 (52.6)	9933 (54.6)	550 (33.6)	
Yes	10969 (47.4)	9609 (45.4)	1360 (66.4)	
Diabetes, n (%)				<0.001
No	18160 (88.5)	16690 (89.2)	1470 (81.7)	

Yes	3292 (11.5)	2852 (10.8)	440 (18.3)	
Hyperlipidemia, n (%)				<0.001
No	5948 (28.2)	5618 (29.4)	330 (16.5)	
Yes	15504 (71.8)	13924 (70.6)	1580 (83.5)	
Cardiovascular disease, n (%)				<0.001
No	19540 (92.9)	18038 (93.9)	1502 (83.7)	
Yes	1912 (7.1)	1504 (6.1)	408(16.3)	
RDW	12.90 [12.30, 13.50]	12.80 [12.30, 13.50]	13.10 [12.50, 13.80]	<0.001
ALB	4.30 [4.10, 4.50]	4.30 [4.10, 4.50]	4.30 [4.10, 4.40]	<0.001
RAR, M (Q ₁ , Q ₃)	2.98 [2.79, 3.23]	2.98 [2.78, 3.22]	3.09 [2.86, 3.33]	<0.001
Quartiles of RAR, n (%)				<0.001
Q1(<2.83)	5266 (29.4)	4952(30.4)	314 (20.6)	
Q2(2.83-3.04)	5414 (27.2)	4991 (27.5)	423 (25.1)	
Q3(3.05-3.31)	5356 (23.6)	4813 (23.1)	543 (27.5)	
Q4(>3.31)	5416 (19.8)	4786 (19.0)	630 (26.8)	

Table S2. Baseline characteristics of patients included in the analysis before and after PSM

Characteristic	Before PSM			After PSM		
	low-RAR (n = 939)	High-RAR (n = 971)	<i>P</i>	low-RAR (n = 735)	High-RAR (n = 735)	<i>P</i>
Age, M (Q ₁ , Q ₃)	65(53, 74)	70.00 (59, 79)	<.001	68 (58, 76)	69(57, 78)	0.293
Sex, n (%)			0.003			0.917
Male	454 (48.35)	404 (41.61)		342 (46.53)	340 (46.26)	
Female	485 (51.65)	567 (58.39)		393 (53.47)	395 (53.74)	
Race/ethnicity, n (%)			<.001			0.067

Non-Hispanic White	716 (76.25)	651 (67.04)	546 (74.29)	519 (70.61)	
Non-Hispanic Black	71 (7.56)	167 (17.20)	69 (9.39)	97 (13.20)	
Other race	152 (16.19)	153 (15.76)	120 (16.33)	119 (16.19)	
Education level, n (%)			<.001		0.665
Below high school	133 (14.16)	193 (19.88)	120 (16.33)	133 (18.10)	
High school	190 (20.23)	219 (22.55)	163 (22.18)	161 (21.90)	
Above high school	616 (65.60)	559 (57.57)	452 (61.50)	441 (60.00)	
Marital status, n (%)			<.001		0.309
Married/living with partner	626 (66.67)	532 (54.79)	459 (62.45)	440 (59.86)	
Single/divorced/widowed	313 (33.33)	439 (45.21)	276 (37.55)	295 (40.14)	
Family PIR, n (%)			<.001		0.525
≤ 1.0	175 (18.64)	250 (25.75)	152 (20.68)	170 (23.13)	
1.1–3.0	345 (36.74)	406 (41.81)	303 (41.22)	294 (40.00)	
> 3.0	419 (44.62)	315 (32.44)	280 (38.10)	271 (36.87)	
Smoking status, n (%)			0.127		0.601
No	467 (49.73)	449 (46.24)	346 (47.07)	336 (45.71)	
Yes	472 (50.27)	522 (53.76)	389 (52.93)	399 (54.29)	
BMI(kg/m2), n (%)			<.001		0.073
<25	325 (34.61)	216 (22.25)	210 (28.57)	191 (25.99)	
25–30	362 (38.55)	309 (31.82)	283 (38.50)	260 (35.37)	
>30	252 (26.84)	446 (45.93)	242 (32.93)	284 (38.64)	
Drinking status, n (%)			0.014		0.882
No	121 (12.89)	164 (16.89)	105 (14.29)	107 (14.56)	
Yes	818 (87.11)	807 (83.11)	630 (85.71)	628 (85.44)	
Physical activity, n (%)			<.001		0.763
Inactive	495 (52.72)	605 (62.31)	416 (56.60)	420 (57.14)	
Moderate	204 (21.73)	181 (18.64)	143 (19.46)	150 (20.41)	
Vigorous	240 (25.56)	185 (19.05)	176 (23.95)	165 (22.45)	
Hypertension, n (%)			<.001		0.643
No	305 (32.48)	245 (25.23)	212 (28.84)	204 (27.76)	

Yes	634 (67.52)	726 (74.77)	523 (71.16)	531 (72.24)	0.29
Diabetes, n (%)					
No	768 (81.79)	702 (72.30)	576 (78.37)	559 (76.05)	0.945
Yes	171 (18.21)	269 (27.70)	159 (21.63)	176 (23.95)	
Hyperlipidemia, n (%)					0.653
No	165 (17.57)	165 (16.99)	128 (17.41)	127 (17.28)	
Yes	774 (82.43)	806 (83.01)	607 (82.59)	608 (82.72)	0.653
Cardiovascular disease, n (%)					
No	786 (83.71)	716 (73.74)	586 (79.73)	579 (78.78)	0.653
Yes	153 (16.29)	255 (26.26)	149 (20.27)	156 (21.22)	

Table S3. Univariate and multivariate Cox analysis of all-cause mortality

Characteristics		Univariate HR(95%CI)	P	Multivariate HR(95%CI)	P
Sex					
	Male	Reference		Reference	
	Female	0.55 (0.46 ~ 0.66)	<0.001	0.64 (0.52 ~ 0.78)	<.001
Race/ethnicity					
	Non-Hispanic White	Reference		Reference	
	Non-Hispanic Black	0.95 (0.72 ~ 1.25)	0.706	0.58 (0.44 ~ 0.78)	<0.001
	Other race	0.40 (0.28 ~ 0.58)	<0.001	0.44 (0.31 ~ 0.64)	<0.001
Education level					
	Below high school	Reference		Reference	
	High school	0.73 (0.57 ~ 0.94)	0.015	0.94 (0.72 ~ 1.23)	0.663
	Above high school	0.50 (0.40 ~ 0.63)	<0.001	0.82 (0.64 ~ 1.05)	0.123
Marital status					
	Married/living with partner	Reference		Reference	
	Single/divorced/widowed	1.50 (1.25 ~ 1.79)	<0.001	1.39 (1.14 ~ 1.70)	0.001
Family PIR					
	≤1.0	Reference		Reference	
	1.1-3.0	1.06 (0.85 ~ 1.32)	0.613	0.89 (0.70 ~ 1.13)	0.329
	>3.0	0.47 (0.36 ~ 0.61)	<0.001	0.53 (0.40 ~ 0.72)	<0.001
Smoking status					
	No	Reference		Reference	
	Yes	1.42 (1.18 ~ 1.71)	<0.001	1.13 (0.92 ~ 1.38)	0.239

BMI(kg/m ²)					
≤25	Reference		Reference		
25-30	0.95 (0.76 ~ 1.18)	0.653	0.74 (0.59 ~ 0.92)		0.008
>30	0.75 (0.60 ~ 0.95)	0.015	0.58 (0.45 ~ 0.74)		<0.001
Drinking status					
No	Reference		Reference		
Yes	0.69 (0.55 ~ 0.87)	0.002	0.83 (0.65 ~ 1.07)		0.152
Physical activity					
Inactive	Reference		Reference		
Moderate	0.72 (0.56 ~ 0.92)	0.008	0.74 (0.57 ~ 0.95)		0.018
Vigorous	0.75 (0.60 ~ 0.95)	0.016	1.03 (0.81 ~ 1.31)		0.791
Hypertension					
No	Reference		Reference		
Yes	2.29 (1.80 ~ 2.91)	<0.001	1.41 (1.09 ~ 1.81)		0.008
Diabetes					
No	Reference		Reference		
Yes	1.66 (1.36 ~ 2.02)	<0.001	1.31 (1.06 ~ 1.62)		0.014
Hyperlipidemia					
No	Reference				
Yes	0.83 (0.66 ~ 1.04)	0.097			
Cardiovascular disease					
No	Reference		Reference		
Yes	2.87 (2.38 ~ 3.46)	<0.001	1.60 (1.31 ~ 1.95)		<0.001
RAR					
low	Reference		Reference		
High	2.29 (1.89 ~ 2.77)	<0.001	2.05 (1.68 ~ 2.50)		<0.001
Age					
<60	Reference		Reference		
≥60	6.88 (4.89 ~ 9.67)	<0.001	4.56 (3.18 ~ 6.52)		<0.001

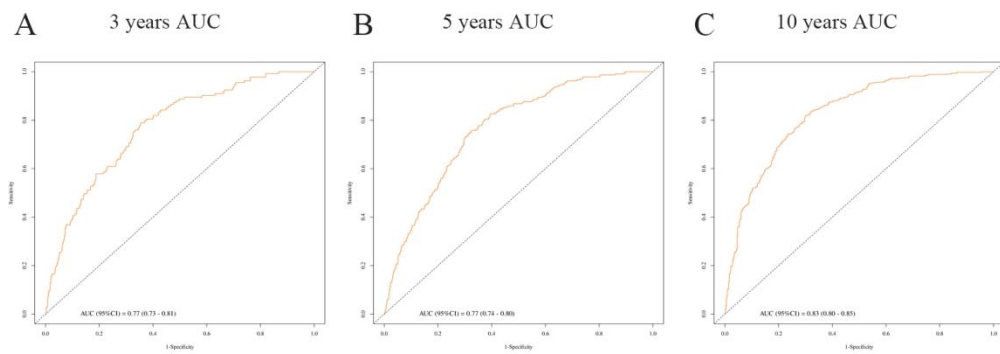


Figure S1. ROC Curves for the 3-year (A), 5-year (B), and 10-year (C) Prognosis Based on RAR Nomograms