

**Table S1.** Characteristics of non-COVID-19 cancer patients by obesity.

	No obesity (1)	Obesity (2)	p-value (1 vs 2)	Standard obesity (3)	Morbid obesity (4)	Massive obesity (5)	p-value (1 vs 3)	p-value (1 vs 4)	p-value (1 vs 5)
<b>N</b>	892774	47035		39138	6915	982			
<b>Men, n(%)</b>	494171 (55.35)	23431 (49.82)	<0.01	20872 (53.33)	2345 (33.91)	214 (21.79)	<0.01	<0.01	<0.01
<b>Age, mean (std)</b>	68.74 (14.78)	66.95 (12.20)	<0.01	67.43 (12.14)	64.82 (12.27)	62.55 (11.69)	<0.01	<0.01	<0.01
<b>Age group (years)</b>			<0.01				<0.01	<0.01	<0.01
≤40	38123 (4.27)	1477 (3.14)		1122 (2.87)	308 (4.45)	47 (4.79)			
41-50	53745 (6.02)	3001 (6.38)		2343 (5.99)	555 (8.03)	103 (10.49)			
51-80	605181 (67.79)	36756 (78.15)		30470 (77.85)	5498 (79.51)	788 (80.24)			
81-90	161624 (18.10)	5294 (11.26)		4727 (12.08)	527 (7.62)	40 (4.07)			
>90	34101 (3.82)	507 (1.08)		476 (1.22)	27 (0.39)	4 (0.41)			
<b>Chemotherapy, n(%)</b>	260703 (29.20)	9254 (19.67)	<0.01	7739 (19.77)	1353 (19.57)	162 (16.50)	<0.01	<0.01	<0.01
<b>Comorbidities, n(%)</b>									
Hypertension	212207 (23.77)	23589 (50.15)	<0.01	19693 (50.32)	3426 (49.54)	470 (47.86)	<0.01	<0.01	<0.01
Dementia	18903 (2.12)	510 (1.08)	<0.01	439 (1.12)	61 (0.88)	10 (1.02)	<0.01	<0.01	0.02
HIV	2344 (0.26)	79 (0.17)	<0.01	69 (0.18)	9 (0.13)	1 (0.10)	<0.01	0.03	0.53
Heart failure	31778 (3.56)	2621 (5.57)	<0.01	2046 (5.23)	484 (7)	91 (9.27)	<0.01	<0.01	<0.01
Chronic respiratory disease	8124 (0.91)	1206 (2.56)	<0.01	798 (2.04)	326 (4.71)	82 (8.35)	<0.01	<0.01	<0.01
Chronic kidney disease	37915 (4.25)	3537 (7.52)	<0.01	2900 (7.41)	548 (7.92)	89 (9.06)	<0.01	<0.01	<0.01
Cirrhosis	17076 (1.91)	1651 (3.51)	<0.01	1354 (3.46)	260 (3.76)	37 (3.77)	<0.01	<0.01	<0.01
Diabetes	99028 (11.09)	14377 (30.57)	<0.01	11597 (29.63)	2424 (35.05)	356 (36.25)	<0.01	<0.01	<0.01
Peripheral vascular disease	26972 (3.02)	2156 (4.58)	<0.01	1935 (4.94)	202 (2.92)	19 (1.93)	<0.01	0.63	0.05
Dyslipidemia	43087 (4.83)	5852 (12.44)	<0.01	5070 (12.95)	696 (10.07)	86 (8.76)	<0.01	<0.01	<0.01
Deficiency Anemia	32308 (3.62)	1991 (4.23)	<0.01	1611 (4.12)	314 (4.54)	66 (6.72)	<0.01	<0.01	<0.01
COPD	39392 (4.41)	3791 (8.06)	<0.01	3123 (7.98)	583 (8.43)	85 (8.66)	<0.01	<0.01	<0.01
Pulmonary bacterial infection	12418 (1.39)	712 (1.51)	0.03	552 (1.41)	128 (1.85)	32 (3.26)	0.75	<0.01	<0.01
<b>Outcomes, n(%)</b>									
Admission to ICU	56365 (6.31)	4903 (10.42)	<0.01	3922 (10.02)	816 (11.80)	165 (16.80)	<0.01	<0.01	<0.01
Severe complication during the inclusion stay	283502 (31.76)	18412 (39.15)	<0.01	14932 (38.15)	2973 (42.99)	507 (51.63)	<0.01	<0.01	<0.01
In-hospital mortality during the inclusion stay	65751 (7.36)	2125 (4.52)	<0.01	1608 (4.11)	412 (5.96)	105 (10.69)	<0.01	<0.01	<0.01
Severe complication within 90 days	369908 (41.43)	21989 (46.75)	<0.01	17861 (45.64)	3543 (51.24)	585 (59.57)	<0.01	<0.01	<0.01
In-hospital mortality within 90 days	120698 (13.52)	3993 (8.49)	<0.01	3107 (7.94)	736 (10.64)	150 (15.27)	<0.01	<0.01	0.11

**Table S2.** Type of cancer by obesity among non-COVID-19 cancer patients.

	No obesity (1)	Obesity (2)	p-value (1 vs 2)	Standard obesity (3)	Morbid obesity (4)	Massive obesity (5)	p-value (1 vs 3)	p-value (1 vs 4)	p-value (1 vs 5)
<b>N</b>	892774	47035		39138	6915	982			
Hematological cancer, n(%)	93329 (10.45)	3994 (8.49)	<0.01	3235 (8.27)	651 (9.41)	108 (11)	<0.01	<0.01	0.58
Solid Cancer with metastasis, n(%)	265076 (29.69)	11579 (24.62)	<0.01	9603 (24.54)	1743 (25.21)	233 (23.73)	<0.01	<0.01	<0.01
Solid Cancer with localized tumor, n(%)	534369 (59.85)	31462 (66.89)	<0.01	26300 (67.20)	4521 (65.38)	641 (65.27)	<0.01	<0.01	<0.01

**Table S3.** Admission to ICU, severe complication and in-hospital mortality of non COVID-19 cancer patients by type of cancer and obesity.

	No obesity (1)	Obesity (2)	p-value (1 vs 2)	Standard obesity (3)	Morbid obesity (4)	Massive obesity (5)	p-value (1 vs 3)	p-value (1 vs 4)	p-value (1 vs 5)
<b>Hematological cancer</b>	93329	3994		3235	651	108			
Admission to ICU	15023 (16.10)	888 (22.23)	<0.01	713 (22.04)	149 (22.89)	26 (24.07)	<0.01	<0.01	0.02
Severe complication during the inclusion stay	39511 (42.34)	2216 (55.48)	<0.01	1758 (54.34)	393 (60.37)	65 (60.19)	<0.01	<0.01	<0.01
In-hospital mortality during the inclusion stay	7614 (8.16)	293 (7.34)	0.06	221 (6.83)	61 (9.37)	11 (10.19)	<0.01	0.26	0.44
Severe complication within 90 days	49419 (52.95)	2544 (63.70)	<0.01	2022 (62.50)	448 (68.82)	74 (68.52)	<0.01	<0.01	<0.01
In-hospital mortality within 90 days	13126 (14.06)	468 (11.72)	<0.01	360 (11.13)	92 (14.13)	16 (14.81)	<0.01	0.96	0.82
<b>Solid Cancer with metastasis</b>	No obesity (1) 265076	Obesity (2) 11579	p-value (1 vs 2)	Standard obesity (3) 9603	Morbid obesity (4) 1743	Massive obesity (5) 233	p-value (1 vs 3)	p-value (1 vs 4)	p-value (1 vs 5)
Admission to ICU	14131 (5.33)	1187 (10.25)	<0.01	970 (10.10)	180 (10.33)	37 (15.88)	<0.01	<.001	<0.01
Severe complication during the inclusion stay	94587 (35.68)	4955 (42.79)	<0.01	3998 (41.63)	816 (46.82)	141 (60.52)	<0.01	<0.01	<0.01
In-hospital mortality during the inclusion stay	37211 (14.04)	1004 (8.67)	<0.01	765 (7.97)	193 (11.07)	46 (19.74)	<0.01	<0.01	0.01
Severe complication within 90 days	123224 (46.49)	6018 (51.97)	<0.01	4863 (50.64)	992 (56.91)	163 (69.96)	<0.01	<0.01	<0.01
In-hospital mortality within 90 days	67324 (25.40)	1905 (16.45)	<0.01	1491 (15.53)	349 (20.02)	65 (27.90)	<0.01	<0.01	0.38
<b>Solid Cancer with localized tumor</b>	No obesity (1) 534369	Obesity (2) 31462	p-value (1 vs 2)	Standard obesity (3) 26300	Morbid obesity (4) 4521	Massive obesity (5) 641	p-value (1 vs 3)	p-value (1 vs 4)	p-value (1 vs 5)
Admission to ICU	27211 (5.09)	2828 (8.99)	<0.01	2239 (8.51)	487 (10.77)	102 (15.91)	<0.01	<0.01	<0.01
Severe complication during the inclusion stay	149404 (27.96)	11241 (35.76)	<0.01	9176 (34.89)	1764 (39.02)	301 (46.96)	<0.01	<0.01	<0.01
In-hospital mortality during the inclusion stay	20926 (3.92)	828 (2.63)	<0.01	622 (2.37)	158 (3.49)	48 (7.49)	<0.01	0.15	<0.01
Severe complication within 90 days	197265 (36.92)	13427 (42.68)	<0.01	10976 (41.73)	2103 (46.52)	348 (54.29)	<0.01	<0.01	<0.01
In-hospital mortality within 90 days	40248 (7.53)	1620 (5.15)	<0.01	1256 (4.78)	295 (6.53)	69 (10.76)	<0.01	0.01	<0.01

**Table S4.** Effect of obesity by type of cancer on the different outcomes, among non COVID-19 cancer patients.

	In-hospital mortality during the stay *	Severe complications during the stay *	Intensive care support during the stay *	In-hospital mortality within 90 days **	Severe complications within 90 days ***
	OR [95% CI]	OR [95% CI]	OR [95% CI]	HR [95% CI]	HR [95% CI]
<b>All cancer</b>	0.620 [0.592-0.649]	1.340 [1.311-1.370]	1.530 [1.481-1.580]	0.648 [0.628-0.669]	1.116 [1.103-1.128]
<b>Hematological cancer</b>	0.877 [0.773-0.994]	1.491 [1.385-1.604]	1.396 [1.288-1.514]	0.830 [0.756-0.912]	1.148 [1.115-1.183]
<b>Solid Cancer with metastasis</b>	0.588 [0.550-0.629]	1.261 [1.208-1.316]	1.693 [1.586-1.807]	0.638 [0.610-0.668]	1.093 [1.070-1.117]
<b>Solid Cancer with localized tumor</b>	0.676 [0.629-0.728]	1.695 [1.357-1.434]	1.515 [1.452-1.581]	0.692 [0.658-0.728]	1.137 [1.120-1.155]

\* Logistic model adjusted on age class, sex, chemotherapy, dementia, heart failure, chronic respiratory disease, cirrhosis, diabetes, deficiency anemia and pulmonary bacterial infection; \*\* Cox model adjusted on age class, sex, dementia, heart failure, chronic respiratory disease, cirrhosis, diabetes, deficiency anemia and pulmonary bacterial infection; \*\*\* Fine & Gray model adjusted on age class, sex, dementia, heart failure, chronic respiratory disease, cirrhosis, diabetes, deficiency anemia and pulmonary bacterial infection.

**Table S5.** Effect of obesity according to its severity and by type of cancer on the different outcomes, among non COVID-19 cancer patients.

	In-hospital mortality during the stay *	Severe complications during the stay *	Intensive care support during the stay *	In-hospital mortality within 90 days **	Severe complications within 90 days ***
	OR [95% CI]	OR [95% CI]	OR [95% CI]	HR [95% CI]	HR [95% CI]
<b>All cancer</b>					
Standard obesity	0.559 [0.531-0.589]	1.289 [1.258-1.320]	1.488 [1.436-1.541]	0.603 [0.581-0.625]	1.090 [1.077-1.104]
Morbid obesity	0.852 [0.769-0.944]	1.581 [1.495-1.671]	1.655 [1.532-1.787]	0.839 [0.780-0.902]	1.229 [1.195-1.264]
Massive obesity	1.649 [1.336-2.035]	2.190 [1.890-2.538]	2.334 [1.954-2.788]	1.247 [1.062-1.464]	1.348 [1.246-1.459]
<b>Hematological cancer</b>					
Standard obesity	0.798 [0.691-0.920]	1.415 [1.305-1.533]	1.417 [1.296-1.550]	0.775 [0.697-0.861]	1.129 [1.093-1.167]
Morbid obesity	1.236 [0.940-1.626]	1.892 [1.584-2.261]	1.283 [1.058-1.556]	1.080 [0.879-1.328]	1.235 [1.154-1.321]
Massive obesity	1.457 [0.769-2.762]	1.810 [1.162-2.818]	1.507 [0.952-2.386]	1.195 [0.731-1.953]	1.202 [1.013-1.427]
<b>Solid Cancer with metastasis</b>					
Standard obesity	0.531 [0.492-0.572]	1.203 [1.148-1.260]	1.696 [1.579-1.821]	0.594 [0.565-0.626]	1.067 [1.042-1.092]
Morbid obesity	0.816 [0.700-0.950]	1.513 [1.359-1.685]	1.602 [1.363-1.884]	0.831 [0.748-0.924]	1.207 [1.144-1.273]
Massive obesity	1.614 [1.157-2.253]	2.532 [1.880-3.411]	2.231 [1.537-3.239]	1.193 [0.935-1.522]	1.353 [1.125-1.626]
<b>Solid Cancer with localized tumor</b>					
Standard obesity	0.603 [0.555-0.656]	1.350 [1.310-1.391]	1.452 [1.385-1.522]	0.638 [0.603-0.675]	1.111 [1.093-1.130]
Morbid obesity	0.937 [0.793-1.106]	1.608 [1.498-1.726]	1.749 [1.583-1.933]	0.906 [0.808-1.017]	1.257 [1.212-1.304]
Massive obesity	2.207 [1.616-3.013]	2.190 [1.817-2.639]	2.462 [1.958-3.096]	1.602 [1.264-2.030]	1.400 [1.276-1.537]

\* Logistic model adjusted on age class, sex, chemotherapy, dementia, heart failure, chronic respiratory disease, cirrhosis, diabetes, deficiency anemia and pulmonary bacterial infection; \*\* Cox model adjusted on age class, sex, dementia, heart failure, chronic respiratory disease, cirrhosis, diabetes, deficiency anemia and pulmonary bacterial infection; \*\*\* Fine & Gray model adjusted on age class, sex, dementia, heart failure, chronic respiratory disease, cirrhosis, diabetes, deficiency anemia and pulmonary bacterial infection.