

Decline of new cancer cases in the first pandemic year: a study from two cancer registries in Italy.

Mario Fusco¹, Ettore Bidoli², Maria Francesca Vitale¹, Federica Toffolutti², Valerio Ciullo¹, Luigino Dal Maso², Diego Serraino²

¹ Registro Tumori ASL Napoli 3 sud (NA), Italy; ²Centro di Riferimento Oncologico di Aviano (CRO) IRCCS, Aviano (PN), Italy

Background/aims

The COVID-19 pandemic has disrupted the health systems worldwide, including oncological services and cancer diagnoses. The aim of this study was to assess the impact of the COVID-19 pandemic on the registration of new cancer cases in 2020 in two cancer registries from northern and southern Italy.

Methods

Comparison of incidence data in 2015–2019 and in 2020 collected by the Friuli Venezia Giulia cancer registry (FVG-CR), north-eastern Italy; and by the ASL Napoli 3 Sud cancer registry (ASLNA3-CR), southern Italy. Crude incidence rates (IRc) for cancer types/sites with at least 35 cases/per year were computed separately in men and women. The annual percentage change (APC) in the period 2015–2019 was also computed to account for the pre-pandemic trend. The number of 2020 new cancer diagnoses was compared, after adjustment for APC, with expected ones based on 2015–2019 IRc.

Conclusions

Study findings documented a strong negative impact of COVID-19 pandemic in new cancer cases in 2020 in both geographic areas , in particular for colon rectum and breast cancer due to a drastic reduction of screening activities.

Results

DIFFERENCE IN EXPECTED CANCER CASES IN THE FIRST YEAR OF THE PANDEMIC IN SOUTHERN AND NORTHERN ITALY: MEN, 2020 VS 2015-2019

	SOUTHERN ITALY: CAMPANIA-ASL NA3 REGISTRY			NORTHERN ITALY: FRIULI VENEZIA GIULIA REGISTRY		
	INCIDENCE, YEAR		Difference 2020 vs 2015-2019	INCIDENCE, YEAR		Difference 2015-2019 vs 2020
	2015-2019	2020		2015-2019	2020	
Cancer site/type	Crude rate (%APC)*	Crude rate	N. (%)	Crude rate (%APC)*	Crude rate	N. (%)
All cancers (non-melanoma skin cancers excluded)	610,5 (-1,4)	536,2	-360 (-12,2)	757,1 (-0,5)	696,2	-348 (-8,0)
Stomach	20,1 (-3,5)	16,5	-15 (-17,9)	31,1 (-3,5)	27,3	-17 (-12,2)
Colon-rectum	71,0 (-1,7)	50,6	-101 (-28,8)	88,2 (-1,4)	79,3	-47 (-10,1)
Liver	32,4 (-7,2)	22,3	-41(-31,0)	35,1 (-0,6)	31,6	-20 (-10,0)
Pancreas	15,2 (0,2)	14,9	-2 (-2,0)	28,5 (-1,5)	30,0	+11 (+5,3)
Upper aero-digestive tract	21,2 (-5,8)	21,9	+9 (+3,3)	34,0 (-2,0)	30,4	-18 (-10,6)
Lung	100,1 (-1,9)	83,9	-77 (-16,2)	91,2 (-1,7)	85,4	-26 (-6,4)
Melanoma	18,8 (+5,1)	16,7	-17 (-11,5)	43,8 (+6,3)	43,7	-18 (-0,2)
Prostate	93,3 (-0,4)	87,2	-33 (-6,5)	162,1 (+1,0)	150,8	-79 (-7,9)
Testis	9,1 (-0,4)	5,7	-18 (-37,6)	7,2 (-1,2)	7,2	- (-0,0)
Kidney	16,2 (+6,5)	18,8	+8 (+16,3)	31,2 (-2,1)	25,2	-31 (-19,2)
Bladder	44,3 (-5,3)	42,5	+1 (-4,0)	41,5 (-4,1)	31,7	-48 (-23,6)
Central nervous system	9,3 (-0,6)	9,8)	+2 (+5,5)	12,6 (-3,3)	11,4	-5 (-9,5)
Thyroid	10,2 (+0,9)	7,6	-14 (-24,7)	8,9 (-1,5)	9,6	+5 (+7,9)
Non-Hodgkin lymphoma	21,5 (-2,3)	20,0	-6 (-7,0)	30,0 (+1,6)	30,5	+1 (+1,7)
Multiple myeloma	6,9 (-4,4)	6,3	-1 (-8,9)	11,1 (+3,5)	8,5	-17(-23,4)
Leukemia, all	16,1 (-4,8)	11,0	-23 (-32,0)	17,2 (+0,2)	18,6	+8 (+8,1)

^aAPC=Annual percentage change

DIFFERENCE IN EXPECTED CANCER CASES IN THE FIRST YEAR OF THE PANDEMIC IN SOUTHERN AND NORTHERN ITALY: WOMEN, 2020 VS 2015-2019

	SOUTHERN ITALY: CAMPANIA-ASL NA3 REGISTRY			NORTHERN ITALY: FRIULI VENEZIA GIULIA REGISTRY		
	INCIDENCE, YEAR		Difference 2020 vs 2015-2019			INCIDENCE, YEAR
	2015-2019	2020		2015-2019	2020	
Cancer site/type	Crude rate [%APC] ^a	Crude rate	Cancer site/type	Crude rate [%APC] ^a	Crude rate	Cancer site/type
All cancers (non-melanoma skin cancers excluded)	497.5 (0.1)	441.9	-330 (-11.2)	662.5 (+0.3)	633.6	-239 (-4.4)
Stomach	12.4 (-4.3)	10.8	-7 (-13.3)	19.9 (+3.0)	18.1	-16 (-9.0)
Colon-rectum	54.5 (0.7)	42.2	-67 (-22.6)	71.7 (+0.5)	67.2	-35 (-6.3)
Liver	17.6 (-2.4)	13.6	-21 (-23.0)	11.5 (-3.2)	10.7	-4 (-7.0)
Pancreas	14.7 (-1.6)	14.5	-1 (-1.2)	29.7 (+2.8)	27.0	-24 (-9.1)
Upper aero-digestive tract	7.2 (5.1)	7.6	+4 (5.6)	11.2 (+1.0)	10.8	-4 (-3.6)
Lung	31.9 (-1.2)	31.4	-3 (-1.6)	51.3 (+1.9)	53.6	+5 (4.5)
Melanoma	16.2 (-1.7)	16.0	--- (-1.7)	36.4 (+6.3)	33.0	-37 (-9.3)
Breast	139.5 (1.3)	128.7	-76 (-7.8)	210.7 (-0.2)	207.7	-31 (-1.4)
Cervix	7.2 (-6.2)	7.4	+3 (3.2)	8.8 (+6.9)	9.1	-3 (3.4)
Endometrium	24.9 (-1.3)	26.2	+8 (5.2)	35.5 (+0.8)	35.3	-6 (-0.6)
Ovary	14.1 (1.3)	13.7	-4 (-2.6)	18.0 (+0.8)	13.4	-30 (-25.6)
Kidney	8.5 (5.1)	8.5	-2 (0.1)	14.2 (-2.0)	10.8	-20 (-23.9)
Bladder	8.8 (1.2)	6.7	-13 (-24.3)	12.2 (-10.8)	9.4	-10 (-23.0)
Central nervous system	6.2 (-1.1)	7.2	+5 (17.3)	9.2 (-3.1)	10.7	+11 (16.3)
Thyroid	28.2 (-4.5)	18.9	-44 (-32.8)	22.3 (-2.1)	16.8	-32 (-24.7)
Non-Hodgkin lymphoma	17.5 (-0.8)	15.4	-11 (-11.7)	23.8 (-5.3)	24.0	+7 (0.8)
Multiple myeloma	6.1 (-0.2)	4.6	-8 (-23.9)	9.4 (+3.0)	8.6	-7 (-8.5)
Leukemia, all	10.8 (0.8)	6.7	-24 (-38.2)	11.2 (-1.5)	13.6	+15 (21.4)

^aAPC=Annual percentage change

360 diagnoses for all types/sites by ASLNA3-CR (-12.2%) and 348 (-8.0%) in FVG-CR were missed in men in 2020. In women, missed cases in 2020 were 330 (-11.2%) and 239 cases (-4.4%) by the ASLNA3-CR and the FVG-CR, respectively. Noteworthy declines were noted for colon-rectum (-28.8% in men; -22.6% in women) in ASLNA3-CR; for bladder (-23.6% in men, -23.0% in women), and kidney (-19.2% in men; -23.9% in women) cancers in FVG-CR. In both registries, a decline in breast cancer cases was documented (-76 cases, -7.8% in ASLNA3-CR; and -31 cases, -1.4% in FVG-CR). More than expected cases were also noted in both registries in 2020, e.g. in ASLNA3_CR, +16.3% for kidney cancer in men and +17.3% for central nervous system in women (CNS); in FVG_CR, +16.3% for CNS in women.