

Recent trends in cancer incidence: a comparison of two urban European areas

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Introduction

Variations of cancer incidence within and across countries are influenced by many different factors, socio-economic status (SES) being one of them. The purpose of this study was to examine the recent trends in cancer incidence in two urban European areas with different levels of SES.

Methods

Age-standardised incidence rates (world standard – ASRW) for cases diagnosed in 2000-2009 for Sofia (Bulgaria) and the Canton of Zurich (Switzerland) were calculated using the data from the corresponding cancer registries. Average annual percent change (AAPC) was estimated with Joinpoint regression analysis.

year	colorectum				lung				breast		cervix		corpus uteri		prostate		all /C44 ex.			
	Sofia		Zurich		Sofia		Zurich		Sofia	Zurich	Sofia	Zurich	Sofia	Zurich	Sofia	Zurich	Sofia		Zurich	
	f	m	f	m	f	m	f	m	f	f	f	f	f	f	m	m	f	m	f	m
2000	26.7	46.3	21.5	35.4	9.6	51.4	14.7	39.2	69.2	88.5	15.6	5.5	17.1	14.0	27.7	91.7	218.2	262.2	245.2	323.9
2001	25.3	39.5	24.1	37.2	8.3	49.4	16.8	36.4	71.7	90.2	17.1	6.0	18.0	14.4	28.1	88.8	223.4	249.5	248.8	320.1
2002	28.6	45.6	22.4	35.1	9.7	49.0	12.2	36.3	71.7	87.9	21.6	5.3	18.1	11.3	31.2	102.6	235.5	267.3	243.7	333.3
2003	31.1	42.2	21.5	35.5	11.2	48.4	16.5	37.5	74.4	84.2	17.4	4.3	18.6	10.6	31.6	95.2	244.3	256.8	244.6	327.6
2004	28.5	43.4	21.3	32.7	10.9	46.1	17.5	36.9	72.7	89.3	15.8	4.8	19.9	12.5	30.0	96.9	229.8	257.9	239.4	317.5
2005	29.6	45.4	21.2	30.2	11.2	51.6	19.4	37.0	72.0	81.2	16.3	3.6	19.0	12.3	33.5	90.6	230.9	272.9	238.9	312.8
2006	28.6	42.6	22.8	29.7	10.6	45.4	18.3	33.2	70.3	82.0	16.9	4.2	18.3	10.2	27.8	92.5	234.0	257.0	240.5	308.0
2007	25.9	46.6	20.0	31.6	11.8	46.4	18.4	36.3	73.1	81.7	17.1	3.9	15.5	10.8	30.7	77.7	233.1	269.6	239.6	298.5
2008	28.7	47.1	18.5	29.4	12.0	47.5	18.8	34.2	67.2	85.8	17.7	4.1	17.2	9.1	30.3	78.6	234.4	271.9	237.6	292.8
2009	27.8	42.4	19.8	27.3	14.0	47.1	19.2	30.4	75.5	83.9	17.3	3.6	17.0	10.0	28.4	76.4	231.9	259.1	238.6	277.7

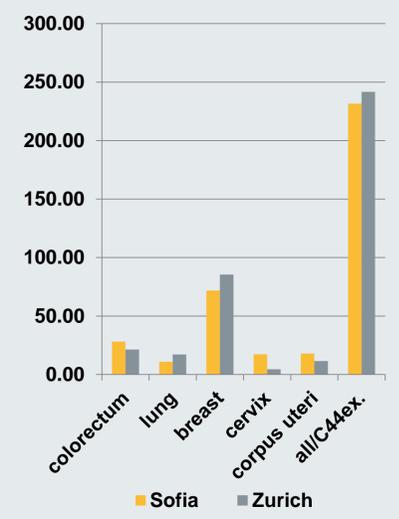
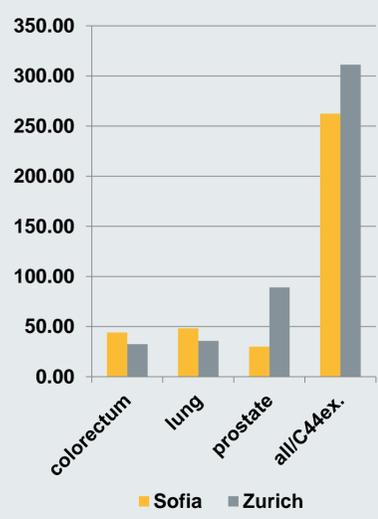


Figure 1: male ASRW, average for years 2000-2009, Sofia and the Canton of Zurich

Figure 2: female ASRW, average for years 2000-2009, Sofia and the Canton of Zurich

Results

ASRWs for all sites combined were higher in the Canton of Zurich, both for men and women. Colorectal (both sexes), lung (men), cervical and corpus uteri cancers had a higher incidence in Sofia. Prostate, breast and lung (women) were more often diagnosed in the Canton of Zurich (table 1; figure 1,2). A significant increase of incidence was observed in both areas for female lung cancer. Overall incidence decreased in the Canton of Zurich, while there was no significant change in Sofia (table 2,3). DCO (death certificate only) rates were higher in Sofia, but with a decreasing trend. The MV (microscopically verified) rates increased in Sofia, in the Canton of Zurich they were stable at about 95% (figure 3).

Conclusions

Cancer incidence rates differ between Sofia and the Canton of Zurich. Different factors may influence these results:

- SES/health care system (access to prevention and care): various possibly influencing factors are listed in table 4.
- Data quality indicators (DCO%, MV%): restricted data access in both areas, shown by quality indicators, probably led to some opposite trends in cancer incidence.

→ These aspects must be considered when interpreting the data and taking public health actions.

AAPC, male			AAPC, female			MV%		DCO%		Table 4: Information on different variables of SES, years 2004-2009, Sofia and the Canton of Zurich										
	Sofia	Zurich		Sofia	Zurich	Sofia	Zurich	Sofia	Zurich	year	Sofia	Zurich	population of 65+ population 15-64 (%)	fertility rate	age at first birth	number of beds for hospital care				
colorectum	0.4	-3	colorectum	0.2	-1.8	↔	↓	↔	↓	2004	1'221'157	1'255'645	20.7	22.5	1.05	1.42	27.1	30.5	8'847	7'586
lung	-0.8	-1.8	lung	4.2	3.2	↑	↑	↑	↑	2005	1'231'622	1'264'141	20.3	22.7	1.13	1.42	27.5	30.8	8'950	7'512
prostate	0.1	-2.4	breast	0.2	-0.8	↔	↓	↔	↓	2006	1'237'891	1'274'384	20.1	23.1	1.18	1.44	27.9	30.9	8'544	7'281
all/C44ex	0.4	-2.6	cervix	-0.2	-5	↔	↓	↔	↓	2007	1'240'788	1'300'545	20.2	23.1	1.23	1.46	27.9	31.2	8'823	7'232
	↑	↓	corpus uteri	-0.7	-4	↔	↓	↔	↓	2008	1'247'059	1'326'775	20.4	23.2	1.32	1.48	28.3	31.4	9'315	7'298
	↑	↓	all/C44ex	0.4	-0.4	↑	↓	↔	↓	2009	1'249'798	1'344'866	20.6	23.4	1.43	1.50	28.6	31.6	9'341	6'908

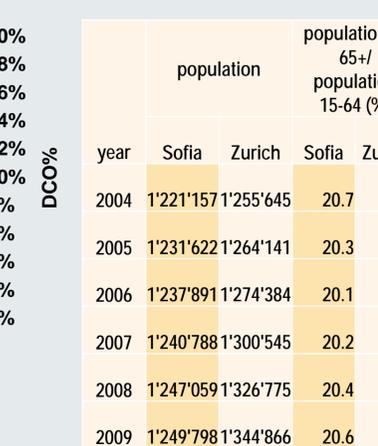


Figure 3: Annual percentage of DCO/MV cases, years 2000-2009, Sofia and the Canton of Zurich

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