ORIGINAL ARTICLE

Malignant cancer mortality in Province of Taranto (Italy). Geographic analysis in an area of high environmental risk

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Key words

Mortality rate • Malignant tumors • Environmental risk

Summary

Background. *A geographic analysis of the causes of death is an important tool for assessing the effectiveness of Public Health initiatives. The aim of this study is to analyse the causes of death between 2000 and 2004, to discover any excess mortality from cancer in Province of Taranto, an area at high environmental risk.*

Methods. *Mortality data from cancer were selected from the Puglia Regional Nominative Causes of Death Registry. Crude and standardized rates and Standardized Mortality Ratios (SMR) were calculated for the five Provinces of the Puglia Region, their capital cities and in four concentric rings around the industrial area located in Province of Taranto.*

Results. *Even if the highest death rate for all tumours resulted in the Province of Lecce (24.9 x 10,000), in the cities of Lecce and Bari (29 x 10,000), the distribution of the SMRs in Province of Taranto showed an excess of mortality (+10%) in the ring next to industrial area. For lung cancer the highest rate was reported in city of Taranto (6 x10,000) and the highest risk (+24%) in the ring next to industrial area. Moreover, in this area 9 (70%) of the 13 considered malignant tumours types presented an excess of mortality.*

Conclusion. *The results uphold the data reported in the published literature. It is fundamental to intensify research into other risk factors (exposure at work and aberrant lifestyles). Moreover, there is an increasing need for a Regional Cancer Register.*

Introduction

A geographic analysis of the cause of death is an important tool for the identification of areas for priority intervention and for assessing the effectiveness of Public Health initiatives.

The combination of indicators used to delineate mortality allows the identification of areas of major risk for specific pathologies and also allows the evaluation of the relative impact of such pathologies on the health and the care needs of the local population of the area [1, 2].

The delineation of the cause of death by typology and by geographic area of residence which shows distinct differences from that *expected*, can give weight to an analysis of exposure to risk factors whether they are attributable to the quality of the social services, to the environment or to the habits and customs or lifestyle of the population [1, 2].

The quality of the information extracted from mortality statistics is heavily dependent on the pertinence and rigour of the methods used to exploit the raw data. The availability and efficiency of producing data are important, but the ability of interpreting them with correct and agreed scientific methods and transforming them into useful information for healthcare workers and decision makers is essential [3].

The limits of mortality data are well known, especially for pathologies for which there are considerable variances of interpretation of the cause of death or of the codifying of the data on the death certificate. They remain, however, a valid basis for interpretive and analytical studies, as in the incidence of cancer or in the assessment of the effectiveness of screening programs in oncology [4-6].

In Italy, mortality data is collected by the national institute of statistics (Istituto Nazionale di Statistica – ISTAT) but many Regions in Italy have set up a parallel register (RENCAM – Regional Nominative Cause of Death Registry) because the statistical-epidemiological relevance of a death is often tied to the family, social and health history of the person involved [7].

In the Puglia Region the collection of mortality data in the last ten years has reached a level of completeness and reliability that allows it to be used for statistical analysis. RENCAM in Puglia, set up in 1998, is maintained by the Regional Epidemiological Observatory (OER) and refers to ISTAT data to verify its complete-

ness and to gauge the quality of the coding of the death records [unpublished observations].
The aims of geographic analyses of health events can be to discover general trends for a specific phenomenon, or can be to compare a designated area with those around it to discover variances in incidence. A risk map is the tool most used to satisfy these objectives [8].
The area of Taranto in Puglia and its surroundings, since the 1970's, has been subject to several mortality studies because of its distinctive situation as a naval port and highly industrialized area. The World Health Organization (WHO) carried out two studies, in 1980-1987 and 1990-1994, on the homonymous Provincial Capital and other towns within the Province [9-11]. In these studies, as in others, high Standardized Mortality Ratios (SMRs) were found for (respiratory, and in particular pleuric) neoplasia [12-15].
Following the results of the WHO studies, the towns involved were officially defined by the Italian Presidential Decree of 23rd April 1989 as an "Area at high environmental risk" and later they were also included in the fourteen Sites of National Interest that need to be cleaned up [16, 17].
The aim of this study was to analyse the causes of death in the five years period 2000-2004, to discover any excess mortality from malignant tumours, both total and organ-specific, in the province and in the city of Taranto. The analysis was carried out by comparing mortality rates between the five Provinces of Puglia Region and between their capital cities. In particular, for the Province of Taranto a geographic analysis has been carried out through the grouping of the towns in four concentric rings around the industrial area comprising the territories of the cities of Taranto and Statte.

Materials and methods

Mortality data from cancer were analysed for residents in Puglia in the years 2000-2004 [1], selected from the Puglia RENCAM which stores the ISTAT death records. The records are collected from the Hygiene and Public Health Service of the Local Health Unit and coded according to the International Classification of Diseases (ICD-9) [18].
The analysis of the completeness of the data collection and of the coding was done by comparing them to the ISTAT death data. There was 99.9% agreement.
All deaths from malignant tumours (ICD-9: 140.x-239.9) were extracted from the RENCAM database. The average number of deaths per year and the crude rates of death per 10,000 inhabitants [2] were calculated for the five Provinces [3], for the five capital cities of Puglia Region and, for the Province of Taranto, for the groupings of towns in four concentric rings around the industrial area. Mortality risk for some degenerative disease, in fact, could be conditioned by the distance from a source of environmental pollution [19].
In **Group 1** there are the cities of Taranto and Statte which lie up to 10 km from the industrial area (computed from the centre of that area to the centre of each town); in **Group 2** there are 12 towns between about 10 and 20 km distant (Carosino, Crispiano, Faggiano, Leporano, Massafra, Monteiasi, Montemesola, Monteparano, Palagiano, Pulsano, Roccaforzata, San Giorgio Ionico); in **Group 3** there are 5 towns between about 20 and 30 km distant (Castellaneta, Grottaglie, Lizzano, Mottola, Palagianello); in **Group 4** there are 10 towns over 30 km distant (Avetrana, Fragagnano, Ginosa, Laterza, Manduria, Martina Franca, Maruggio, San Marzano, Sava, Torricella – Fig. 1).

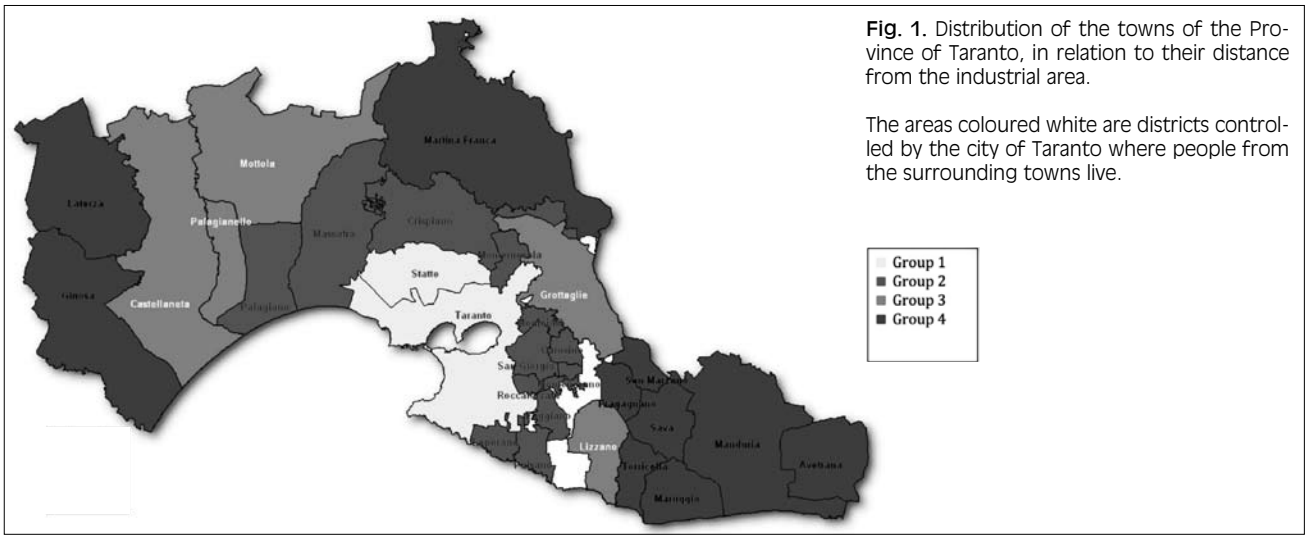


Fig. 1. Distribution of the towns of the Province of Taranto, in relation to their distance from the industrial area.

The areas coloured white are districts controlled by the city of Taranto where people from the surrounding towns live.

[1] In the study period, Puglia region had a population of 4,037,000 inhabitants/year, with 40,000 newborns (livebirths?) and 32,200 deaths.
[2] To calculate mortality rates, ISTAT data were used for the population resident at 1st January of each year under analysis [20].
[3] In the study period, Puglia region amounted to five provinces: Bari (1,569,000 inhabitants/year), Brindisi (402,000 inhabitants/year), Foggia (690,000 inhabitants/year), Lecce (796,000 inhabitants/year), Taranto (580,000 inhabitants/year).

To compare the different geographic areas, rates standardised by direct method were used. The age-standardised rates were calculated stratifying the observed deaths and the respective population into 19 5-year age groups; the population standard used was that of the Italian between-census of 2001.
The numbers of expected deaths and the SMRs were calculated using age-specific rates of Puglia Region as standard. Mortality excess in an area was considered statistically significant if the SMR's lower limit of the 95% Confidence Interval (CI), calculated following the Byar method as described by Rothman and Boice, was higher than 1 [21-25].
The Figures show the SMRs for each ring in the Taranto province.
The analysis was carried out using the statistical software Epi-info 3.4 (public domain software-CDC Atlanta, Georgia; WHO Geneva, Switzerland), OpenEpi and STATA 10 MP for Mac OS X. The Figures were created using the routine Epimap of Epi-info 3.4.

Results

All Tumour Mortality

Comparing mortality rates for all tumours between the five provinces and between their capital cities, Taranto did not show the highest crude and standardized rates in the region: the crude mortality rates for all tumours were higher both in the Province (24.9 x 10,000) and in the city of Lecce (29 x 10,000), while the standardised rates were higher in the city of Bari (29 x 10,000 – Tab. I). However, there was a significant mortality excess in the city of Taranto (SMR: 1.1; 95% CI: 1.01-1.2), as in the Province of Lecce, which was significant only for males (SMR 1.07; 95% CI: 1.01-1.13), and in the city of Bari for both men and women (SMR 1.15; 95% CI: 1.07-1.22 – Tab. II).
The distribution of the SMRs in the 4 groups of towns of the Province of Taranto show an excess of mortality for all tumours, statistically significant, in Group 1 (Cities of Taranto and Statte), of 10% higher than the regional standard (Fig. 2).

Lung and Pleural Cancer Mortality

The standardized mortality rates for lung cancer were highest in the city of Taranto, both in males (10.7 x 10,000) and in total (6 x 10,000 – Tab. III). High rates were also reported in both the Province (5.6 x 10,000) and city of Lecce (5.8 x 10,000). The SMRs for lung cancer confirmed this excess of mortality for the city of Taranto (1.25; 95% CI: 1.03-1.51), which showed a significant value 28% higher than the regional standard for males (Tab. IV).
Lung cancer mortality was shown to be concentrated in the first group of towns in the Province of Taranto with a significant 24% excess mortality (Fig. 3).
The standardised rates for pleural cancer were higher in the Province and in the city of Taranto (Tab. V). The SMRs for pleural cancer confirmed the significant considerable excess of mortality in males in the Province of Taranto and especially in the city itself with values over 4 times higher than the regional standard (Tab. VI).
The geographical distribution of the SMRs in the Province of Taranto show a net excess of mortality for pleural cancer in the first group next to the industrial area (Fig. 4).

Excess Mortality for other organ specific tumours

In the Province of Taranto an excess of mortality, even if not statistically significant, was found for pancreatic cancer (SMR = 1.18; 95% CI: 0.91-1.49), for breast can-

Tab. I. Crude rates and directly standardised rates for all tumours mortality (x10,000 inhabitants), per sex and geographic area. Puglia, average: years 2000-2004.

	Crude rates			Directly standardised rates		
Geographic Area	M	F	TOT	M	F	TOT
Bari Province	25.26	17.06	21.07	28.97	20.64	25.05
Brindisi Province	28.56	18.29	23.22	30.12	20.00	25.00
Foggia Province	27.06	16.93	21.89	29.29	19.32	24.53
Lecce Province	31.33	19.05	24.90	31.81	20.08	25.79
Taranto Province	26.71	17.36	21.90	29.25	20.42	25.02
Bari Town	32.91	21.85	27.17	33.92	23.77	28.89
Brindisi Town	26.81	18.35	22.40	30.28	21.27	25.71
Foggia Town	28.33	19.71	23.89	32.43	23.10	27.77
Lecce Town	35.98	22.96	28.98	33.29	22.26	27.36
Taranto Town	31.72	20.17	25.69	33.67	22.10	27.70
Group 1	30.77	19.77	25.04	33.18	22.06	27.48
Group 2	21.85	13.33	17.53	26.46	17.27	22.25
Group 3	24.00	15.45	19.63	27.77	19.89	24.09
Group 4	26.33	17.91	22.02	26.91	20.42	23.98

M = male; F = female; TOT = total

Tab. II. SMR and 95% CI of Byar for all tumours, by sex and geographic area. Puglia, average years 2000-2004.

	SMR M	95% CI		SMR F	95% CI		SMR M+F	95% CI	
Geographic Area		low	up		lower	upper		lower	upper
Bari Province	0.97	0.93	1.02	1.02	0.97	1.08	1.00	0.96	1.03
Brindisi Province	1.01	0.93	1.10	0.99	0.89	1.09	0.99	0.93	1.06
Foggia Province	0.98	0.92	1.05	0.96	0.88	1.04	0.98	0.93	1.03
Lecce Province	1.07	1.01	1.13	1.00	0.93	1.07	1.03	0.98	1.08
Taranto Province	0.98	0.91	1.06	1.01	0.92	1.10	1.00	0.94	1.05
Bari Town	1.14	1.04	1.24	1.17	1.05	1.29	1.15	1.07	1.22
Brindisi Town	1.02	0.84	1.22	1.06	0.85	1.31	1.03	0.89	1.18
Foggia Town	1.09	0.95	1.25	1.15	0.98	1.35	1.11	1.00	1.23
Lecce Town	1.12	0.95	1.32	1.10	0.90	1.33	1.09	0.96	1.24
Taranto Town	1.13	1.01	1.27	1.10	0.96	1.26	1.11	1.02	1.21
Group 1	1.12	1.00	1.24	1.10	0.96	1.25	1.10	1.01	1.20
Group 2	0.89	0.74	1.06	0.86	0.68	1.08	0.89	0.77	1.02
Group 3	0.92	0.75	1.12	0.96	0.74	1.22	0.94	0.80	1.10
Group 4	0.91	0.79	1.04	1.00	0.85	1.18	0.95	0.86	1.06

M = male; F = female; TOT = total; SMR = Standardized Mortality Ratio; CI = confidence interval.

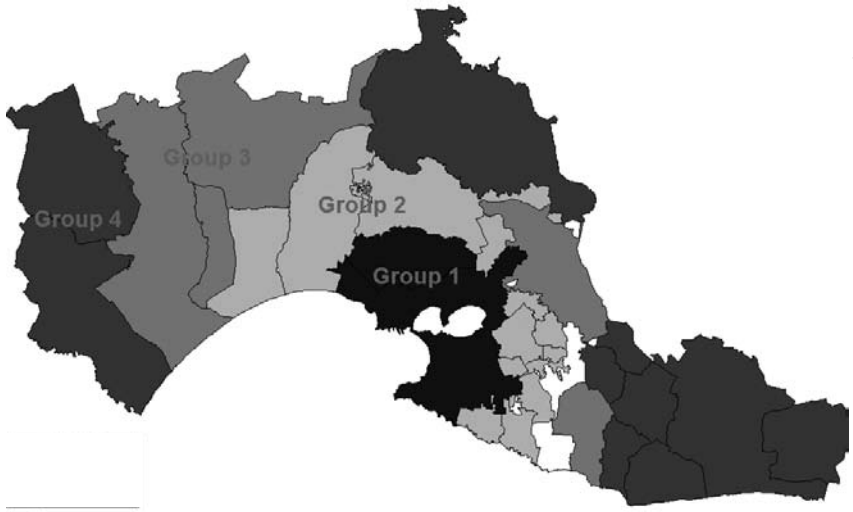


Fig. 2. Distribution of SMRs for all tumours in the 4 groups of towns of the Province of Taranto, years 2000-2004.

Tab. III. Raw rates and directly standardised rates for lung cancer mortality (x 10,000 inhabitants), per sex and geographic area. Puglia, average: years 2000-2004.

	Crude Rates			Directly standardised rates		
Geographic Area	M	F	TOT	M	F	TOT
Bari Province	6.45	1.12	3.73	7.43	1.37	4.43
Brindisi Province	8.24	1.26	4.62	8.72	1.37	4.95
Foggia Province	6.70	0.85	3.72	7.35	0.97	4.17
Lecce Province	10.15	1.27	5.50	10.25	1.33	5.64
Taranto Province	8.27	1.17	4.62	9.02	1.34	5.17
Bari Town	8.38	1.69	4.91	8.58	1.82	5.14
Brindisi Town	8.15	1.43	4.65	9.32	1.66	5.40
Foggia Town	7.37	1.25	4.22	8.44	1.49	4.88
Lecce Town	10.91	2.14	6.20	10.14	2.08	5.84
Taranto Town	10.04	1.56	5.62	10.69	1.67	5.99
Group 1	9.74	1.53	5.47	10.49	1.68	5.93
Group 2	6.50	0.82	3.62	7.75	1.07	4.49
Group 3	8.39	0.89	4.56	9.51	1.12	5.39
Group 4	7.57	1.09	4.25	7.78	1.17	4.53

M = male; F = female; TOT = total.

Tab. IV. SMR and 95% CI of Byar for lung cancer, by sex and geographic area. Puglia, average years 2000-2004.

	SMR M	95% CI		SMR F	95% CI		SMR M+F	95% CI	
Geographic Area		low	up		lower	upper		lower	upper
Bari Province	0.89	0.81	0.97	1.05	0.84	1.29	0.92	0.85	1.00
Brindisi Province	1.04	0.88	1.21	1.07	0.70	1.56	1.03	0.88	1.18
Foggia Province	0.88	0.77	1.00	0.76	0.51	1.08	0.87	0.77	0.98
Lecce Province	1.22	1.10	1.35	1.04	0.77	1.35	1.17	1.07	1.29
Taranto Province	1.08	0.95	1.23	1.06	0.74	1.48	1.08	0.96	1.22
Bari Town	1.02	0.85	1.22	1.40	0.93	2.03	1.06	0.90	1.24
Brindisi Town	1.10	0.76	1.53	1.28	0.50	2.70	1.10	0.79	1.50
Foggia Town	1.01	0.76	1.31	1.13	0.54	2.10	1.01	0.78	1.29
Lecce Town	1.21	0.88	1.62	1.60	0.77	2.94	1.21	0.91	1.58
Taranto Town	1.28	1.03	1.56	1.33	0.76	2.14	1.25	1.03	1.51
Group 1	1.26	1.02	1.53	1.32	0.77	2.11	1.24	1.03	1.48
Group 2	0.93	0.66	1.29	0.82	0.26	1.95	0.94	0.68	1.27
Group 3	1.14	0.79	1.59	0.85	0.22	2.22	1.12	0.80	1.54
Group 4	0.93	0.71	1.19	0.95	0.44	1.78	0.95	0.74	1.20

M = male; F = female; TOT = total; SMR = Standardized Mortality Ratio; CI = confidence interval.

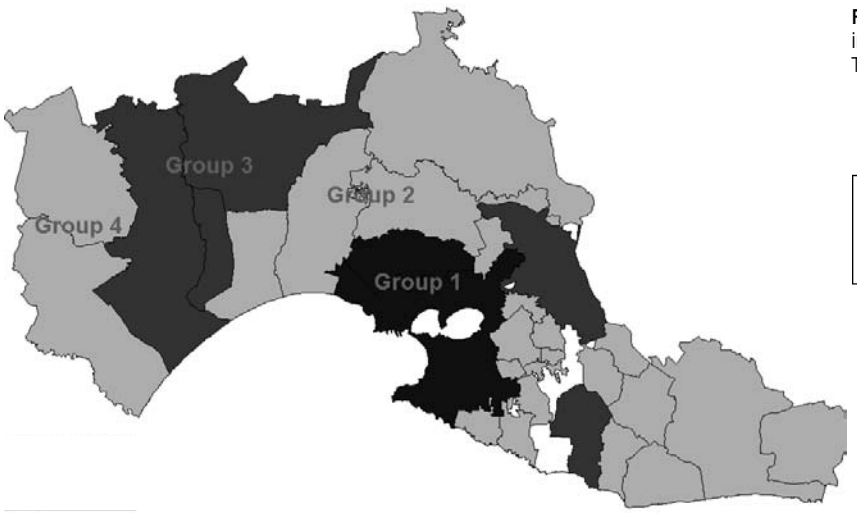


Fig. 3. Distribution of SMRs for lung cancer in the 4 groups of towns of the Province of Taranto, years 2000-2004.

Tab. V. Raw rates and directly standardised rates for pleural cancer (x10,000 inhabitants), per sex and geographic area. Puglia, average: years 2000-2004.

	Crude Rate			Directly standardised rates		
Geographic Area	M	F	TOT	M	F	TOT
Bari Province	0.19	0.08	0.13	0.22	0.09	0.15
Brindisi Province	0.18	0.06	0.11	0.19	0.06	0.13
Foggia Province	0.09	0.05	0.07	0.10	0.05	0.07
Lecce Province	0.11	0.06	0.08	0.11	0.06	0.08
Taranto Province	0.41	0.13	0.27	0.45	0.15	0.30
Bari Town	0.40	0.15	0.27	0.41	0.16	0.28
Brindisi Town	0.28	0.04	0.16	0.34	0.04	0.19
Foggia Town	0.16	0.03	0.09	0.18	0.03	0.11
Lecce Town	0.05	0.04	0.05	0.05	0.03	0.04
Taranto Town	0.90	0.27	0.57	0.98	0.28	0.61
Group 1	0.87	0.25	0.55	0.97	0.27	0.60
Group 2	0.18	0.07	0.12	0.22	0.09	0.16
Group 3	0.10	0	0.05	0.11	0	0.05
Group 4	0.15	0.09	0.12	0.15	0.11	0.13

M = male; F = female; TOT = total.

Tab. VI. SMR and 95% CI of Byar for pleural cancer, by sex and geographic area. Puglia, average years 2000-2004.

Geographic Area	SMR M	95% CI		SMR F	95% CI		SMR M+F	95% CI	
		low	up		lower	upper		lower	upper
Bari Province	1.07	0.59	1.78	1.11	0.41	2.38	1.09	0.67	1.66
Brindisi Province	0.91	0.21	2.51	0.73	0.02	3.60	0.85	0.26	2.05
Foggia Province	0.48	0.10	1.39	0.61	0.04	2.52	0.52	0.16	1.25
Lecce Province	0.53	0.14	1.35	0.71	0.11	2.33	0.57	0.22	1.22
Taranto Province	2.20	1.12	3.87	1.84	0.50	4.72	2.10	1.19	3.44
Bari Town	2.03	0.76	4.37	1.82	0.27	5.95	1.95	0.87	3.76
Brindisi Town	1.56	0.05	7.67	0.59	0	12.00	1.24	0.06	5.53
Foggia Town	0.90	0.03	4.41	0.34	0	7.04	0.73	0.04	3.24
Lecce Town	0.23	0	4.64	0.49	0	9.95	0.30	0	3.34
Taranto Town	4.62	2.06	8.90	3.42	0.63	10.32	4.21	2.13	7.45
Group 1	4.57	2.08	8.67	3.26	0.60	9.84	4.13	2.12	7.24
Group 2	1.03	0.01	5.74	1.05	0	11.77	1.05	0.05	4.70
Group 3	0.54	0	6.04	-	-	-	0.40	0	4.43
Group 4	0.75	0.02	3.69	1.25	0	8.14	0.91	0.10	3.27

M = male; F = female; TOT = total; SMR = Standardized Mortality Ratio; CI = confidence interval.

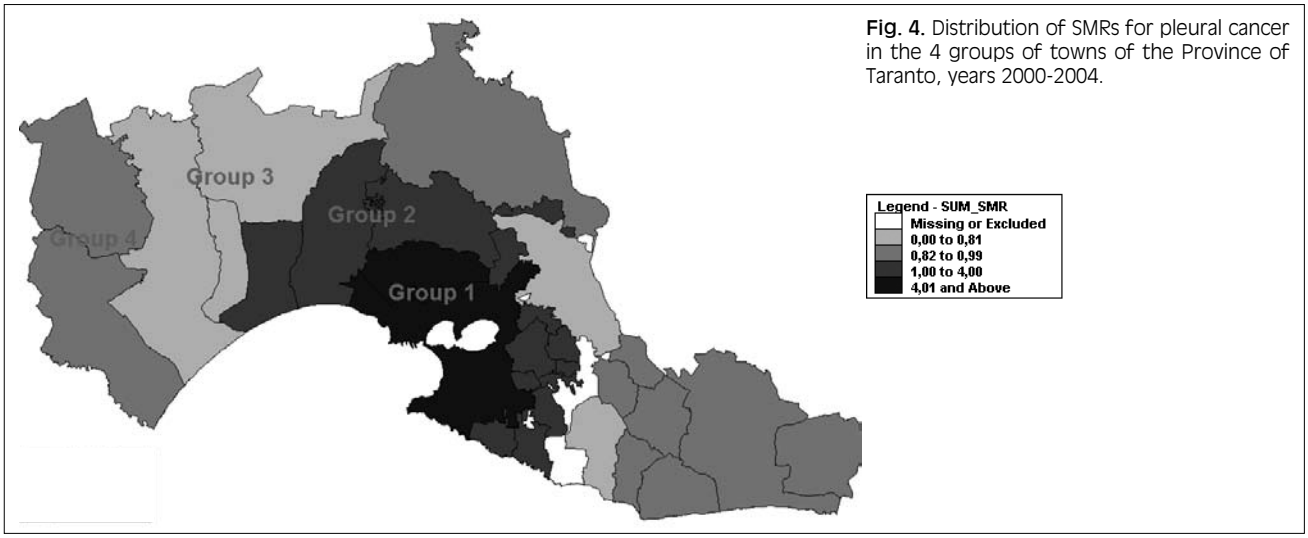


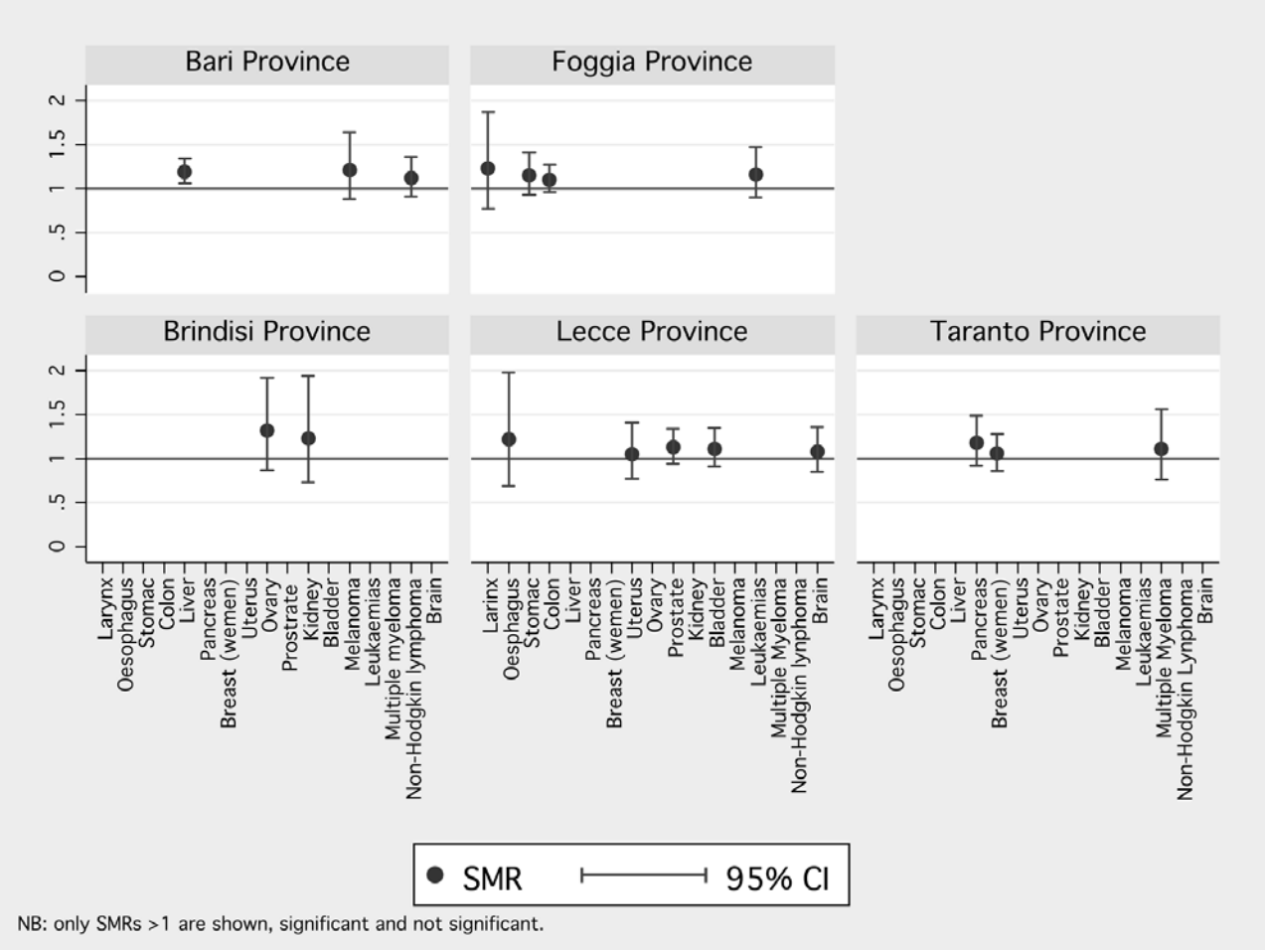
Fig. 4. Distribution of SMRs for pleural cancer in the 4 groups of towns of the Province of Taranto, years 2000-2004.

cer (SMR = 1.05; 95% CI: 0.86-1.28) and for multiple myeloma (SMR = 1.11; 95% CI: 0.75-1.56 – Fig. 5).
In the city of Taranto an excess of mortality, even if not significant, was found for pancreatic cancer (SMR = 1.26; 95% CI: 0.83-1.83), for breast cancer (SMR = 1.14; 95% CI: 0.81-1.55) and for bladder cancer (SMR = 1.20; 95% CI: 0.78-1.77 – Fig. 6).
Among the towns and cities of the Province of Taranto, those near the industrial zone of Taranto-Statte showed a consistent excess of mortality, even if not statistically significant, compared to the rest of the Province for most of the organ tumour sites examined. In particular, this group of towns showed an excess of mortality for laryngeal cancer (SMR = 1.18; 95% CI: 0.46-2.47), oesophageal cancer (SMR = 1.42; 95% CI: 0.44-3.37), for breast cancer (SMR = 1.14; 95% CI: 0.82-1.54), for uterine cancer (SMR = 1.20; 95% CI: 0.64-2.05), for prostate cancer (SMR = 1.13; 95% CI: 0.77-1.60), for bladder cancer (SMR = 1.21; 95% CI: 0.80-1.76), for multiple myeloma (SMR = 1.25; 95% CI: 0.68-2.10), for non-Hodgkin lymphoma (SMR = 1.21; 95% CI: 0.69-1.98), and for brain cancer (SMR = 1.11; 95% CI: 0.68-1.72). In the second group of town an excess of mortality was found only for stomach cancer (SMR = 1.09; 95% CI: 0.58-1.86), while in the third group only for pancreatic cancer (SMR = 1.53; 95% CI: 0.79-2.66). In the fourth group excess mortality was found for ovarian cancer (SMR = 1.25; 95% CI: 0.6-2.29) and for myeloma (SMR = 1.65; 95% CI: 0.63-3.50 – Fig. 7).

Discussion

Although the province of Taranto does not present the highest mortality risk for all tumours, it is clear an excess

Fig. 5. SMR and 95% CI of Byar for organ specific malignant tumour, by Province. Puglia, average years 2000-2004.



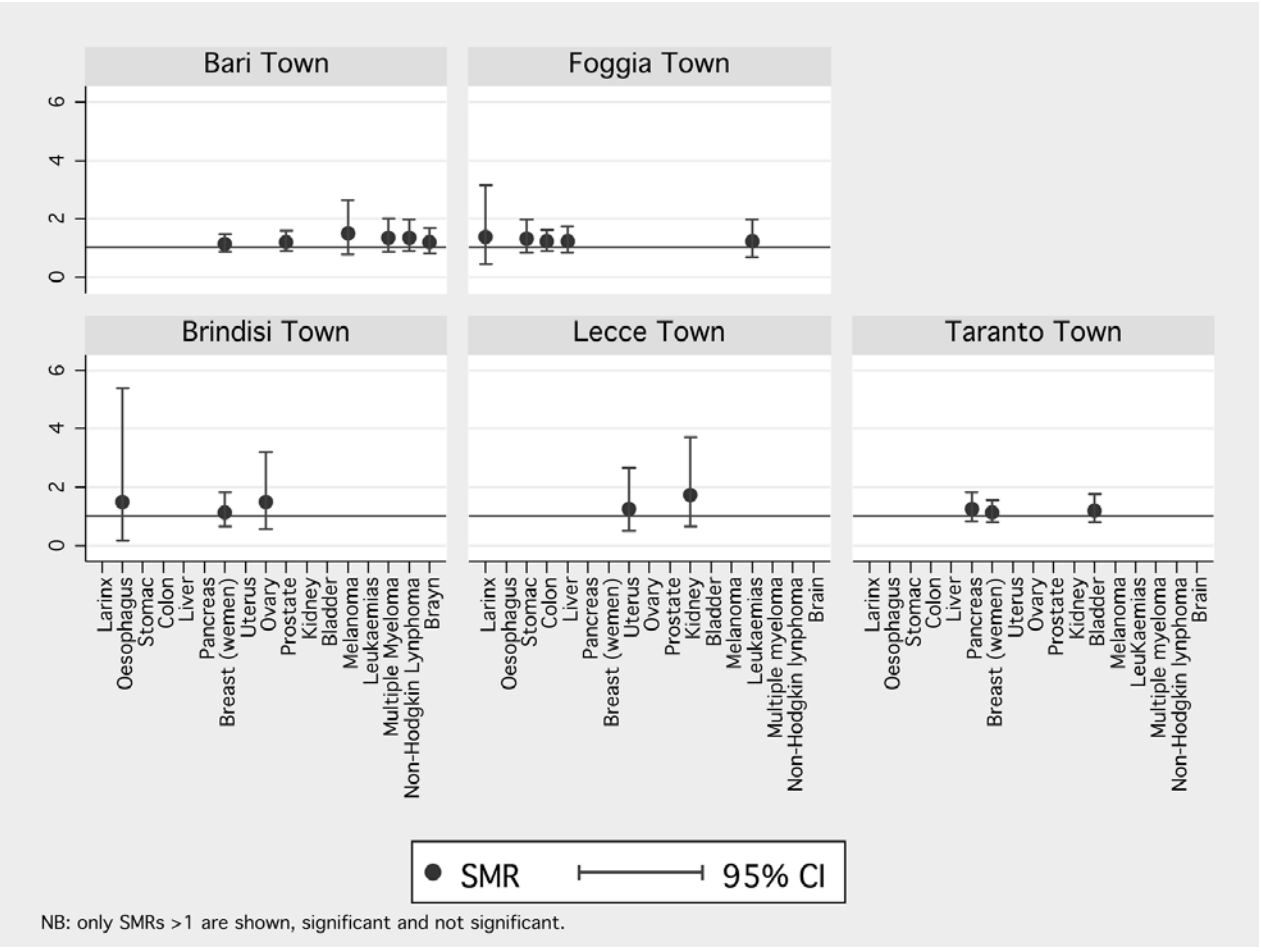
of cancer mortality in the Taranto city and in its neighbor (industrial area of Taranto-Statte). The data had also shown an excess of cancer mortality in the urban areas of the provincial capital cities of the Puglia Region. These results are in agreement with the published literature: environmental causal factors linked to exposure to pollutants persist with greater frequency in larger cities . In cities where the concentration of particulate matter (PM) is higher, the WHO has estimated a short term relative risk of dying of 1.0074 for an increase of 10 μg/m^3 of PM_{10} and a relative risk of 1.015 for an increase of $PM_{2,5}$ of 10 μg/m^3. The estimates for long term relative risk of dying for the same increase of $PM_{2,5}$ e PM_{10} are respectively 1.14 and 1.10 [26, 27]. Additionally, the excess of mortality in larger cities could be the effect of a different distribution of behavioural risk factors between high density urban environments and rural settings [28, 29].

The different distribution of behavioural risk factors could partially explain the exception represented by the province of Lecce: the high risk reported for this province could be related to smoking habit in population because of the long tradition to grow up and manufacture tobacco on large scale for commercial purposes and subsequently the low cost of cigarettes [*personal communication*].

On the other hand, the environmental pollutant in the area of Taranto is more than in the other cities because of industrial complex and an important part of population is exposed to contaminants because of work. These evidences are able to explain as well as the significant excess of mortality for lung and pleuric tumours in the city of Taranto. This could be also due to exposure to asbestos. As considered by Giua et al. in 2005 [12], Taranto's coke oven batteries create a carcinogenic risk because of workers' exposure to PAHs (Polycyclic aromatic hydrocarbons), benzene and asbestos. Because the vicinity to the city and the inadequacy of measures of pollution control, a risk also exist for general population. Moreover, from the analysis carried out it can be seen that 9 (70%) of the 13 malignant tumours that have an excess of mortality in the Province of Taranto pertain to the towns-group next to the industrial zone.

The present study upholds the data reported in the published literature [9-13] and urges the description and definition of behaviour and lifestyle of the population insomuch as they are factors that can potential modify individual contact with the multitude of environmental contaminants, as for example shown in the interaction between O_3 and cigarette smoke [30]. In this contest, it is also fundamental to continue to intensify research

Fig. 6. SMR and 95% CI of Byar for organ specific malignant tumour, by Province capital city. Puglia, average years 2000-2004.



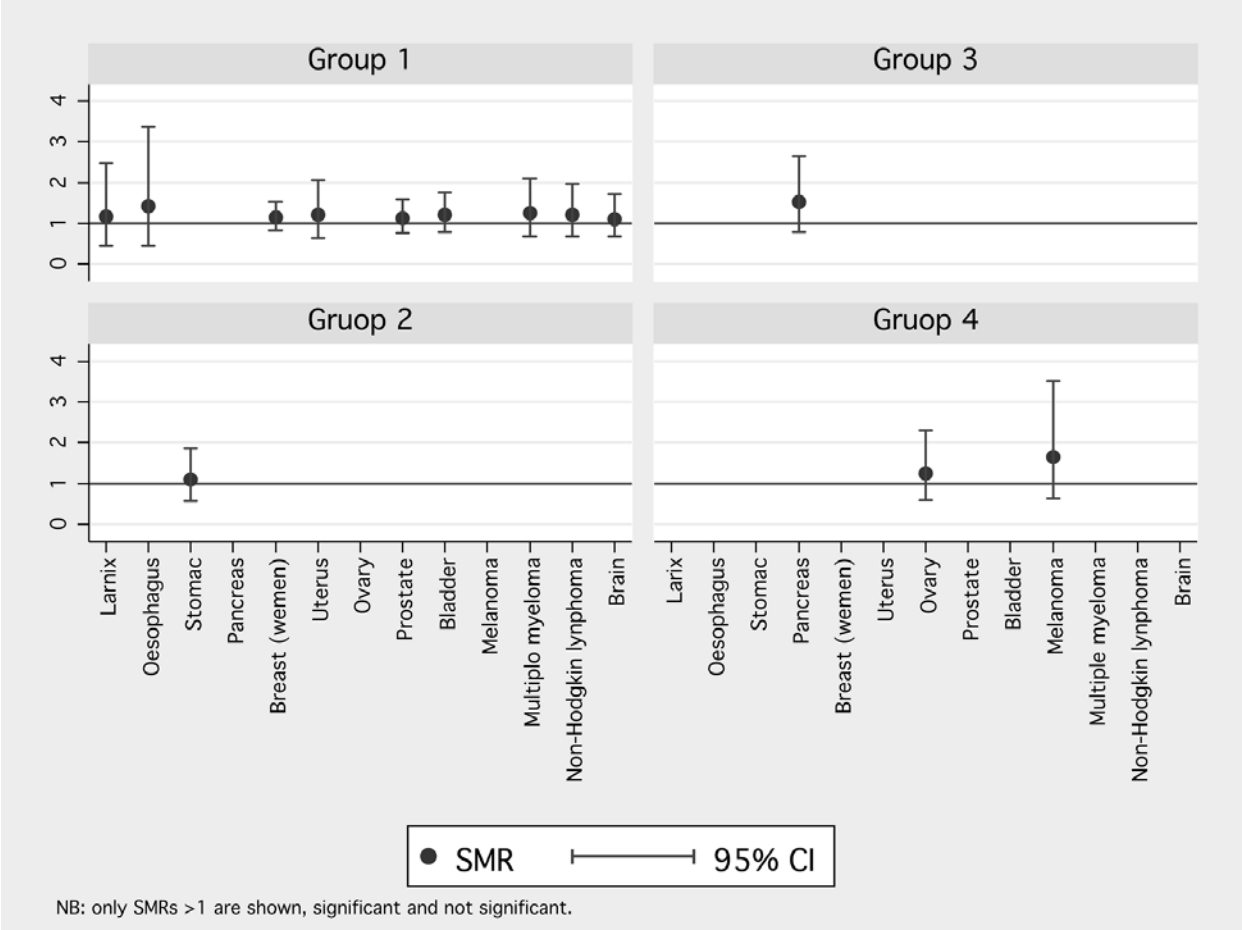
NB: only SMRs >1 are shown, significant and not significant.

into the determining factors of exposure at work and their interaction with aberrant lifestyles, especially considering the particular aetiology of malignant tumours like that of the pleura and the problem of the presence at Taranto of one of the largest industrial zones in Europe [31, 32].

Mortality studies like the present, even though intrinsically limited by the data related to exposure taking place many years prior to death, are fundamental in situations, like that of the Puglia Region, where the carrying out of detailed epidemiological analyses on the incidence of malignant tumours is made more difficult by the scanty coverage of a Regional Public Cancer Register.

However, the results furnished by the present study demonstrate the accuracy and reliability of the information gathering system of mortality data of the Puglia RENCAM database. The availability of such information gives many advantages: the possibility of analysing mortality data logistically and "near" in time to the event itself; information which is more accurate and more up-to-date than that published by ISTAT which, because of the centralisation of region data, uses an automatic instead of manual coding system, with time delays of up to four years; and record-linkage with other information sources for the setting up of pathology registers and cancer registers.

Fig. 7. SMR and 95% CI of Byar for organ specific malignant tumour, in the four town groups in the Province of Taranto, average years 2000-2004.



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