

2014 年天津市恶性肿瘤流行情况及疾病负担分析

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摘要: [目的] 分析 2014 年天津市恶性肿瘤发病、死亡情况及疾病负担。[方法] 分析 2014 年天津市户籍居民的肿瘤登记随访数据,计算发病率、死亡率、构成比、中国人口标化率、世界人口标化率,并分析恶性肿瘤造成的疾病负担。[结果] 2014 年,天津市恶性肿瘤发病率为 306.71/10 万(男性 303.28/10 万,女性 310.17/10 万),中标率 179.52/10 万。恶性肿瘤发病率前 5 位为肺癌、女性乳腺癌、甲状腺癌、结直肠癌和肝癌。全市恶性肿瘤死亡率为 180.78/10 万(男性 210.79/10 万,女性 150.58/10 万),中标率 93.08/10 万。恶性肿瘤死亡率前 5 位为肺癌、肝癌、结直肠癌、胃癌和女性乳腺癌。恶性肿瘤所致伤残调整寿命年(disability adjusted life year, DALY)率为 23.3/千人,男性和女性分别为 26.1/千人和 20.5/千人。[结论] 天津市应针对肺癌、结直肠癌、肝癌、胃癌、女性乳腺癌等癌种开展重点防治,在全面掌握癌症流行情况的基础上,完善癌症综合防治网络,降低癌症疾病负担。

关键词: 恶性肿瘤;发病率;死亡率;疾病负担;伤残调整寿命年;天津

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Incidence, Mortality and Disease Burden of Cancer in Tianjin, 2014

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Abstract: [Purpose] To analyze the incidence, mortality and disease burden of cancer in Tianjin, 2014. [Methods] Stratified by areas, gender and age groups, the incidence, mortality, age-standardized rates (ASR) by Chinese standard population and world population, constituent ratio and disability-adjusted life year (DALY) of cancer in Tianjin were calculated. [Results] In 2014, the cancer incidence rate in Tianjin was 306.71/10⁵ (303.28/10⁵ for males, 310.17/10⁵ for females), and the ASR China and ASR world were 179.52/10⁵ and 172.87/10⁵, respectively. Cancers of lung, female breast, thyroid gland, colorectum and liver were the most common cancers. The cancer mortality rate was 180.78/10⁵ (210.79/10⁵ for males, 150.58/10⁵ for females), and the ASR China and ASR world were 93.08/10⁵ and 91.43/10⁵, respectively. Lung cancer, liver cancer, colorectal cancer, stomach cancer and female breast cancer were the most fatal cancers. The DALYs caused by cancer was 23.3 healthy life years per 1000 person years, and 26.1 and 20.5 healthy life years per 1000 person years in males and in females, respectively. [Conclusion] Cancers of lung, colorectum, liver, stomach and female breast are the major healthy threats in Tianjin. To decrease the disease burden of cancer, comprehensive efforts of cancer prevention and control should be carried out in Tianjin persistently.

Key words: cancer; incidence; mortality; disease burden; disability adjusted life year (DALY); Tianjin

恶性肿瘤的流行已成为全球重大公共卫生问题,了解恶性肿瘤的发病、死亡情况可动态掌握癌情流行和发展趋势,为制定防控策略提供参考。伤残调

整寿命年(disability adjusted life year, DALY)综合考虑疾病造成的早死和失能引起的损失,可从社会层面衡量全人群的疾病负担^[1]。本文旨在分析 2014 年天津市恶性肿瘤发病和死亡情况,并采用 DALY 评价恶性肿瘤对天津市居民造成的疾病负担,为指导恶性肿瘤的综合防治工作提供循证依据。

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1 资料与方法

1.1 资料来源

资料来源于天津市疾病预防控制中心覆盖全市的肿瘤随访登记系统,包括2014年1月1日至12月31日期间户籍居民诊断为恶性肿瘤的数据。人口数据来源于天津市公安局,覆盖人口为10 166 462人(其中男性占50.16%,女性占49.84%;城市地区占51.03%,农村地区占48.97%)。

1.2 质量控制

肿瘤登记数据的质量评价参照《中国肿瘤登记工作指导手册》^[2]、国际癌症登记协会(IACR)^[3]关于肿瘤登记质量控制的要求以及《五大洲癌症发病率第XI卷》^[4]。评价指标包括病理组织学诊断比例(MV%)、死亡/发病比(M/I)、仅有死亡医学证明书比例(DCO%)等。2014年,天津市恶性肿瘤登记数据的质控指标为:MV%为58.08%,DCO%为0.01%,M/I为0.59,符合国家B级标准。

1.3 统计学处理

采Access、Excel和SPSS13.0等软件分析恶性肿瘤的粗发病率、粗死亡率、构成比、中国人口标化率(简称中标率,采用2000年全国普查标准人口)、世界人口标化率(简称世标率,采用Segi's世界标准人口)。DALY=YLL+YLD^[5],其中YLL为死亡损失寿命年,YLD为伤残损失寿命年。

$$YLL=N \times DW \times C \times e^{(\alpha)} / (\beta+r)^2 \{ e^{-(\beta+r)(L+\alpha)} [-(\beta+r)(L+\alpha) - 1] - e^{-(\beta+r)\alpha} [-(\beta+r)\alpha - 1] \}$$

$$YLD=I \times DW \times C \times e^{(\alpha)} / (\beta+r)^2 \{ e^{-(\beta+r)(L+\alpha)} [-(\beta+r)(L+\alpha) - 1] - e^{-(\beta+r)\alpha} [-(\beta+r)\alpha - 1] \}$$

其中N为年龄别和性别死亡人数;I为新发病

例数;DW为伤残权重,取0.317^[6];r为贴现率,取0.03;C为年龄权重调整常数,取0.1658;年龄权重函数参数β取0.04;e为每一年龄的预期寿命;α为死亡或残疾的平均年龄;L为失能病程或早逝导致的年损失。期望寿命采用WHO推荐的标准期望寿命表^[7],即男性出生期望寿命为80岁,女性出生期望寿命为82.5岁。采用WHO提供的Dismod II和DALY计算表进行以上分析^[7]。

2 结果

2.1 总体发病和死亡水平

2014年天津市恶性肿瘤发病率为306.71/10万(男性303.28/10万,女性310.17/10万),中标率179.52/10万。城市地区发病率为376.60/10万,农村地区发病率为233.88/10万(Table 1)。

恶性肿瘤死亡率为180.78/10万(男性210.79/10万,女性150.58/10万),中标率93.08/10万。城市地区死亡率为224.60/10万,农村地区死亡率为135.11/10万(Table 1)。

2.2 年龄别发病率和死亡率

天津市恶性肿瘤年龄别发病率随着年龄增长而增加,在80~岁组达到高峰,在60岁以上年龄组为男性发病率高于女性(Figure 1A)。恶性肿瘤年龄别死亡率在不满5岁稍高,随后下降,20岁以后随着年龄增长而增加,在80~岁组达到高峰(Figure 1B)。

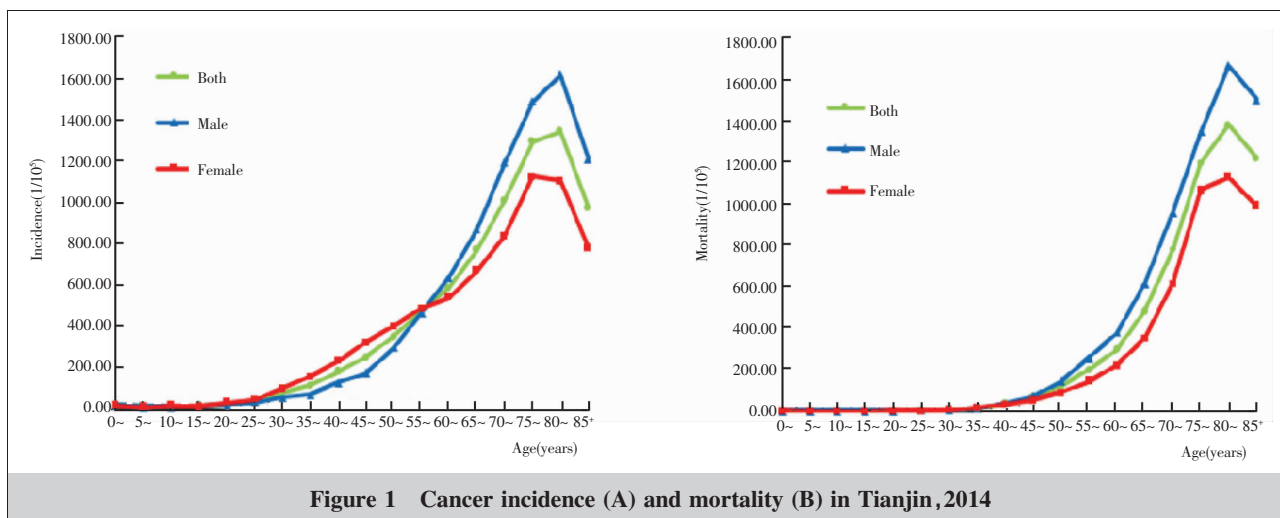
2.3 主要癌种发病和死亡情况

2014年天津市恶性肿瘤发病率第1位的是肺癌(76.03/10万),其次是女性乳腺癌、甲状腺癌、结直肠癌和肝癌,前10位恶性肿瘤占全部恶性肿瘤的

Table 1 The incidence and mortality of cancer registries in Tianjin, 2014

Areas	Gender	Incidence				Mortality			
		Cases	Crude rate (1/10 ⁵)	ASR China (1/10 ⁵)	ASR world (1/10 ⁵)	Cases	Crude rate (1/10 ⁵)	ASR China (1/10 ⁵)	ASR world (1/10 ⁵)
All areas	Both	31182	306.71	179.52	172.87	18379	180.78	93.08	91.43
	Male	15465	303.28	174.28	170.78	10749	210.79	112.37	111.19
	Female	15717	310.17	185.82	175.94	7630	150.58	74.93	72.81
Urban	Both	19539	376.60	196.19	188.91	11653	224.60	97.75	96.02
	Male	9825	377.87	190.21	186.42	6904	265.53	120.44	119.23
	Female	9714	375.33	203.99	192.98	4749	183.49	76.40	74.06
Rural	Both	11643	233.88	158.42	152.46	6726	135.11	85.58	83.97
	Male	5640	225.67	152.91	149.77	3845	153.85	100.15	98.96
	Female	6003	242.15	164.31	155.68	2881	116.22	71.92	70.02

Notes: ASR China: age-standardized rate by Chinese standard population(2000); ASR world: age-standardized rate by Segi's population.



73.42%。男性发病前 5 位的是肺癌、肝癌、结直肠癌、胃癌和膀胱癌；女性前 5 位是肺癌、乳腺癌、甲状腺癌、结直肠癌和子宫体癌(Table 2)。

恶性肿瘤死亡率第 1 位的是肺癌(65.48/10 万),其次是肝癌、结直肠癌、胃癌和女性乳腺癌,前 10 位恶性肿瘤占全部恶性肿瘤的 79.34%。男性死亡前 5 位的是肺癌、肝癌、胃癌、结直肠癌和食管癌；女性死亡前 5 位的是肺癌、乳腺癌、结直肠癌、肝癌和胃癌(Table 3)。

2.4 恶性肿瘤疾病负担 DALY

2014 年天津市恶性肿瘤合计损失的 DALY 为 23.69 万人年,男性占 56.07%,女性占 43.93%。恶性肿瘤所致的 DALY 率为 23.3/千人,男性和女性分别为 26.1/千人和 20.5/千人。城市地区的恶性肿瘤 DALY 率为 27.7/千人,农村地区为 18.8/千人。城乡男女恶性肿瘤的 DALY 率均随年龄增长而增加,45 岁以后增加明显,在 70~79 岁达到最高,85 岁以上有所下降(Table 4)。

2014 年天津市因恶性肿瘤损失的 DALY 率前 5 位的癌种为肺癌(7.9/千人)、肝癌(2.5/千人)、女性乳腺癌(2.2/千人)、结直肠癌(1.7/千人)和胃癌(1.7/千人)。在前 5 位癌种中,男性 DALY 均高于女性。因恶性肿瘤早死导致的 YLL 占 DALY 的主要部分,肺癌、肝癌 YLL 占 DALY 的 98%,乳腺癌 YLL 占 DALY 的 87%。

3 讨论

2014 年天津市恶性肿瘤发病率为 306.71/10 万,

中标率 179.52/10 万,城市男性是发病水平最高的人群。与 2010 年相比^[8],全市发病率增长了 14.52%,女性发病率增长多于男性,其中农村女性增长最多。与 2010 年^[8]相比,结直肠癌发病率上升了 15.63%,其中城市男性结直肠癌的发病率上升较多,达 23.00%。甲状腺癌发病率增长较多,与 2010 年^[8]相比增长了 324.71%,升至全市恶性肿瘤发病的第 3 位。

从死亡水平分析,2014 年天津市恶性肿瘤死亡率为 180.78/10 万,中标率 93.08/10 万。男性高于女性,城市高于农村,城市男性为死亡率最高的人群。与 2010 年相比^[8],2014 年恶性肿瘤死亡率增长了 12.50%,农村女性死亡率增长较多。与 2010 年^[8]相比,结直肠癌死亡率增长较多,为 29.27%,男性死亡率增长达 38.51%;农村地区肺癌死亡率增长较多。甲状腺癌死亡率的整体增长情况与发病相比相对较低,但农村地区死亡率增长较多,达 84%。本市恶性肿瘤粗发病和死亡率高于河北^[9]、江苏^[10]、广西^[11]及全国水平^[12],但标化率低于以上地区,可能与天津市老龄人口比例较高有关^[13]。

2014 年天津市恶性肿瘤总体年龄别发病和死亡率均为在 80~岁组达到高峰,在 85 岁以上组出现下降,这与其他研究的趋势一致^[14-16]。有研究提出这可能与致癌物暴露和累积随着年龄变化、高年龄组老人的细胞增殖潜能降低而导致的抑癌作用、年龄相关的免疫系统变化等因素^[17]有关。

天津市恶性肿瘤 DALY 率为 23.3/千人,男性高于女性,城市高于农村,70~79 岁为 DALY 率最高的年龄组。因恶性肿瘤早死导致的 YLL 占 DALY 的 95.15%,伤残导致的 YLD 占 4.85%,说明恶性肿瘤

Table 2 The top 10 cancer incidences in Tianjin, 2014

Rank	All areas				Urban areas				Rural areas			
	Sites	Incidence (1/10 ⁵)	ASR China (1/10 ⁵)	Constituent ratio(%)	Sites	Incidence (1/10 ⁵)	ASR China (1/10 ⁵)	Constituent ratio(%)	Sites	Incidence (1/10 ⁵)	ASR China (1/10 ⁵)	Constituent ratio(%)
Both												
1	Lung	76.03	39.14	24.79	Lung	89.68	39.47	23.81	Lung	61.81	38.38	26.43
2	Breast(female)	60.61	38.20	9.85	Breast(female)	81.10	46.79	10.74	Breast(female)	39.21	27.66	8.35
3	Thyroid gland	25.44	20.20	8.29	Colorectum	35.25	16.15	9.36	Thyroid gland	22.98	18.62	9.83
4	Colorectum	25.38	13.38	8.27	Thyroid gland	27.79	21.76	7.38	Liver	16.71	10.61	7.15
5	Liver	20.51	11.16	6.69	Liver	24.15	11.50	6.41	Colorectum	15.09	9.53	6.45
6	Stomach	18.43	9.83	6.01	Stomach	23.75	11.02	6.31	Stomach	12.90	8.24	5.51
7	Uterus	13.83	8.10	2.25	Uterus	17.70	9.38	2.34	Cervix	11.09	8.62	2.36
8	Cervix	12.79	9.47	2.08	Cervix	14.41	10.43	1.91	Uterus	9.80	6.51	2.09
9	Ovary	10.80	6.95	1.75	Kidney	14.15	7.21	3.76	Ovary	7.83	5.66	1.67
10	Kidney	10.56	6.06	3.44	Ovary	13.64	7.95	1.81	Leukemia	7.29	5.95	3.12
Male												
1	Lung	89.74	47.80	29.59	Lung	111.03	51.11	29.38	Lung	67.58	43.06	29.95
2	Liver	29.08	16.52	9.59	Colorectum	39.73	19.06	10.51	Liver	24.45	16.06	10.83
3	Colorectum	28.57	15.73	9.42	Liver	33.54	16.77	8.88	Stomach	17.33	11.15	7.68
4	Stomach	25.22	13.53	8.32	Stomach	32.81	15.30	8.68	Colorectum	16.97	11.14	7.52
5	Bladder	14.79	8.06	4.88	Kidney	18.85	9.70	4.99	Bladder	10.56	6.99	4.68
6	Kidney	13.88	8.15	4.58	Bladder	18.85	8.83	4.99	Thyroid gland	9.88	8.57	4.38
7	Thyroid gland	12.98	10.56	4.28	Thyroid gland	15.96	12.39	4.22	Kidney	8.72	6.09	3.87
8	Esophagus	10.79	5.65	3.56	Prostate	13.15	5.76	3.48	Esophagus	8.72	5.60	3.87
9	Lymphoma	9.96	6.20	3.28	Lymphoma	12.77	7.18	3.38	Leukemia	8.68	7.34	3.85
10	Pancreas	9.79	5.33	3.23	Esophagus	12.77	5.78	3.38	Pancreas	7.40	4.76	3.28
Female												
1	Lung	62.24	30.88	20.07	Breast	81.10	46.79	21.61	Lung	55.99	34.00	23.12
2	Breast	60.61	38.20	19.54	Lung	68.23	28.31	18.18	Breast	39.21	27.66	16.19
3	Thyroid gland	37.97	29.83	12.24	Thyroid gland	39.68	31.29	10.57	Thyroid gland	36.18	28.46	14.94
4	Colorectum	22.16	11.14	7.15	Colorectum	30.76	13.43	8.19	Colorectum	13.19	8.00	5.45
5	Uterus	13.83	8.10	4.46	Uterus	17.70	9.38	4.71	Cervix	11.09	8.62	4.58
6	Cervix	12.79	9.47	4.12	Liver	14.72	6.37	3.92	Uterus	9.80	6.51	4.05
7	Liver	11.88	5.96	3.83	Stomach	14.64	7.04	3.90	Liver	8.91	5.37	3.68
8	Stomach	11.60	6.36	3.74	Cervix	14.41	10.43	3.84	Stomach	8.43	5.47	3.48
9	Ovary	10.80	6.95	3.48	Ovary	13.64	7.95	3.63	Ovary	7.83	5.66	3.23
10	Pancreas	7.99	3.97	2.58	Pancreas	10.51	4.49	2.80	Leukemia	5.89	4.54	2.43

Note: ASR China: age-standardized rate by Chinese standard population(2000).

Table 3 The top 10 cancer mortalities in Tianjin, 2014

Rank	Sites	All areas			Urban areas			Rural areas				
		Mortality (1/10 ⁵)	ASR China (1/10 ⁵)	Constituent ratio (%)	Sites	Mortality (1/10 ⁵)	ASR China (1/10 ⁵)	Constituent ratio (%)	Sites	Mortality (1/10 ⁵)	ASR China (1/10 ⁵)	Constituent ratio (%)
Both												
1	Lung	67.48	33.74	37.33	Lung	81.09	33.75	36.10	Lung	53.29	33.10	39.44
2	Liver	18.14	9.46	10.03	Liver	21.38	9.67	9.52	Liver	14.76	9.12	10.93
3	Colorectum	14.22	6.91	7.87	Colorectum	20.01	8.22	8.91	Breast(female)	8.75	5.59	3.23
4	Stomach	13.73	6.93	7.60	Stomach	18.72	8.07	8.33	Stomach	8.54	5.32	6.32
5	Breast(female)	12.71	6.73	3.50	Breast(female)	16.50	7.56	3.66	Colorectum	8.20	4.99	6.07
6	Pancreas	8.02	4.07	4.43	Pancreas	9.68	4.18	4.31	Pancreas	6.29	3.89	4.65
7	Esophagus	5.63	2.73	3.11	Prostate	7.08	2.70	1.58	Brain	4.42	3.05	3.27
8	Prostate	5.06	2.32	1.40	Esophagus	6.80	2.75	3.03	Esophagus	4.40	2.73	3.26
9	Brain	4.96	3.05	2.74	Ovary	6.65	3.47	1.48	Leukemia	4.36	3.50	3.23
10	Ovary	4.84	2.73	1.33	Kidney	5.61	2.38	2.50	Lymphoma	2.97	2.02	2.20
Male												
1	Lung	79.03	41.34	37.49	Lung	98.03	43.41	36.92	Lung	59.26	37.89	38.52
2	Liver	25.98	14.10	12.33	Liver	30.46	14.51	11.47	Liver	21.33	13.52	13.86
3	Stomach	19.02	9.95	9.02	Stomach	26.27	11.80	9.89	Stomach	11.48	7.36	7.46
4	Colorectum	16.51	8.47	7.83	Colorectum	23.42	10.29	8.82	Colorectum	9.32	5.87	6.06
5	Esophagus	8.71	4.46	4.13	Esophagus	10.54	4.53	3.97	Esophagus	6.80	4.39	4.42
6	Pancreas	8.65	4.58	4.10	Pancreas	10.42	4.75	3.93	Pancreas	6.80	4.35	4.42
7	Bladder	6.28	3.02	2.98	Bladder	8.50	3.26	3.20	Brain	5.04	3.56	3.28
8	Brain	5.53	3.49	2.62	Kidney	7.08	3.18	2.67	Leukemia	4.84	4.16	3.15
9	Lymphoma	5.10	2.93	2.42	Prostate	7.08	2.70	2.67	Bladder	3.96	2.56	2.57
10	Leukemia	5.10	3.67	2.42	Lymphoma	6.65	3.23	2.51	Lymphoma	3.48	2.45	2.26
Female												
1	Lung	55.85	26.54	37.09	Lung	64.06	24.57	34.91	Lung	47.28	28.65	40.68
2	Breast	12.71	6.73	8.44	Colorectum	16.58	6.30	9.03	Breast	8.75	5.59	7.53
3	Colorectum	11.92	5.45	7.92	Breast	16.50	7.56	8.99	Liver	8.15	4.92	7.01
4	Liver	10.24	4.99	6.80	Liver	12.25	4.97	6.68	Colorectum	7.06	4.16	6.07
5	Stomach	8.41	4.13	5.58	Stomach	11.13	4.61	6.06	Pancreas	5.77	3.45	4.96
6	Pancreas	7.38	3.59	4.90	Pancreas	8.93	3.62	4.86	Stomach	5.57	3.41	4.79
7	Ovary	4.84	2.73	3.21	Ovary	6.65	3.47	3.62	Leukemia	3.87	2.84	3.33
8	Brain	4.38	2.62	2.91	Gallbladder	5.06	1.92	2.76	Brain	3.79	2.54	3.26
9	Gallbladder	4.03	1.85	2.67	Brain	4.95	2.76	2.70	Cervix	2.94	2.07	2.53
10	Leukemia	3.89	2.52	2.58	Lymphoma	4.29	1.93	2.34	Gallbladder	2.94	1.72	2.53

Note: ASR China: age-standardized rate by Chinese standard population(2000).

Table 4 Age-specific rates of YLL, YLD and DALYs of cancer in Tianjin, 2014

Age groups (years)	Both				Male				Female			
	YLL	YLD	DALY	DALY rate (‰)	YLL	YLD	DALY	DALY rate (‰)	YLL	YLD	DALY	DALY rate (‰)
All												
0~	675	80	755	1.6	382	30	412	1.6	293	50	343	1.5
5~	885	112	997	1.3	559	40	598	1.5	326	72	399	1.1
15~	2764	261	3024	1.6	1632	76	1708	1.7	1132	185	1316	1.4
30~	11323	1350	12673	5.8	5744	427	6171	5.6	5579	923	6502	5.9
45~	65406	3898	69304	26.8	39312	1500	40812	31.7	26095	2397	28492	21.9
60~	68205	3124	71329	56.0	40774	1407	42181	67.5	27431	1717	29149	44.9
70~	53261	1913	55175	96.2	27732	893	28625	105.1	25529	1020	26549	88.2
80+	22876	754	23629	77.1	11943	372	12314	87.5	10933	382	11315	68.3
Total	225395	11491	236887	23.3	128077	4745	132822	26.1	97319	6746	104065	20.5
Urban												
0~	296	23	318	1.5	178	6	184	1.6	118	17	134	1.3
5~	325	23	348	1.2	236	4	240	1.6	89	19	108	0.8
15~	1040	146	1185	1.4	622	51	674	1.5	417	94	511	1.2
30~	5591	708	6299	5.6	2579	221	2800	4.9	3013	487	3499	6.3
45~	39203	2579	41782	29.7	24598	1124	25722	36.4	14605	1455	16060	22.9
60~	39011	2084	41095	57.0	24428	973	25402	71.5	14583	1111	15694	42.9
70~	33933	1348	35281	103.1	17830	582	18412	115.6	16103	766	16869	92.2
80+	16871	512	17383	83.4	8698	244	8942	93.1	8173	268	8441	75.2
Total	136270	7423	143693	27.7	79169	3207	82376	31.7	57101	4216	61317	23.7
Rural												
0~	379	42	421	1.6	204	19	223	1.7	175	23	198	1.6
5~	560	40	600	1.2	323	31	353	1.4	237	9	246	1.1
15~	1724	115	1839	1.7	1009	37	1046	1.9	715	78	793	1.5
30~	5732	618	6349	5.9	3165	192	3357	6.3	2567	426	2993	5.5
45~	26204	1538	27742	23.4	14714	589	15303	26.3	11490	950	12439	20.7
60~	29194	1126	30320	54.8	16346	514	16860	62.5	12849	612	13461	47.5
70~	19328	620	19948	86.3	9902	306	10208	90.2	9426	314	9740	82.6
80+	6004	207	6211	63.2	3244	105	3349	74.8	2760	102	2862	53.5
Total	89125	4306	93430	18.8	48907	1792	50699	20.3	40218	2514	42732	17.2

Table 5 The top 5 DALY rates of cancers in Tianjin, 2014

Cancer types	Both				Male				Female			
	YLL	YLD	DALY	DALY rate (‰)	YLL	YLD	DALY	DALY rate (‰)	YLL	YLD	DALY	DALY rate (‰)
Lung	78662	1624	80285	7.9	45787	956	46743	9.2	32875	668	33542	6.6
Liver	24940	404	25344	2.5	18519	268	18787	3.7	6421	136	6557	1.3
Breast(female)	9606	1473	11079	2.2	—	—	—	—	9606	1473	11079	2.2
Colorectum	16325	840	17165	1.7	9295	448	9744	1.9	7029	392	7421	1.5
Stomach	16633	566	17198	1.7	11144	366	11510	2.3	5489	200	5689	1.1

所造成的健康寿命年损失主要由早死导致，与其他地区的研究一致^[18-24]。本市 DALY 率低于昆山市 (30.6/千人)^[19]和甘肃省 (26.22/千人)^[22]，高于贵阳市 (22.9/千人)^[20]、广西省 (16.6/千人)^[23]等地区。与国际水平相比，本市水平低于日本 (48.0/千人)、韩

国 (39.8/千人)、新加坡 (29.7/千人)等亚洲较发达地区，高于印度 (17.3/千人)、菲律宾 (21.2/千人)等发展中地区^[24]。有多项国外研究提示通过改善饮食、增加体育锻炼、戒烟、早诊早治、阻断传染性病原体感染等可预防的危险因素可有效降低恶性肿瘤造成

的疾病负担^[25-27]。

天津市恶性肿瘤的流行近年来呈上升趋势,除病因和人口老龄化,筛查检出手段的改进和肿瘤登记系统的完善可能也会导致报告率的上升。天津市肺癌的发病、死亡和DALY率均居首位,流行水平高于全国大部分地区^[12]。天津市18岁以上吸烟率为25.5%^[28],略低于我国相关调查(27.3%)^[29],高于杭州城区(20.51%)^[30]及香港(10.5%)^[31]。因此本市要进一步加强控烟力度,降低吸烟率和二手烟暴露率,推行肺癌早期筛查的覆盖面,针对高危人群开展综合防治措施。天津市结直肠癌的发病和死亡率增长速度较快,可能与居民生活方式逐渐西化、肥胖率较高有关^[32]。因此天津应着力推行结直肠癌防治的健康宣教,降低肥胖率,减少居民红肉和脂肪摄入,增加膳食纤维的摄入,继续提高高危人群筛查率。近年来本市甲状腺癌发病增长速度较快,高发趋势与上海、浙江等沿海发达地区一致^[33,34],可能环境雌激素的暴露或糖代谢紊乱的上升趋势有关^[34,35],也可能与诊断筛查水平的改进有关。

天津市的肿瘤防治工作应以肺癌、结直肠癌、乳腺癌为重点,坚持预防为主、防治结合,不断完善癌症综合防治网络,要继续推行控烟限酒、吃动平衡等健康生活方式的普及,提高癌症防治核心知识的知晓度,扩大重点癌种的筛查覆盖面,提高早诊早治率,降低居民癌症疾病负担。

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