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李氏大藥廠
Department of medicine and information
医学及信息部

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2005- 2020年中国国家和地方癌症负担趋势：国家死亡率监测数据分析

产品战略&医学与信息部

2023-12

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National and subnational trends in cancer burden in China, 2005–20: an analysis of national mortality surveillance data

Jinfei Qi*, Mengdong Li*, Lijun Wang, Yifei Hu, Wei Liu, Zhang Long, Zifang Zhou, Peng Yin, Maigeng Zhou

Summary

Background Cancer has been the leading cause of death since 2010 in China, with increasing incidence, mortality, and burden. We aimed to assess national and subnational changes in the cancer burden from 2005 to 2020 in China using data from the National Mortality Surveillance System.

Methods We extracted data on cancer-related deaths from the National Mortality Surveillance System, which accounts for 24·3% of the country's population with national and provincial representativeness. Data for the surveillance population stratified by age and sex were extracted from the National Bureau of Statistics of China. We estimated mortality and years of life lost (YLLs) for all cancers and for 23 cancer groups by age and sex, nationally, and for 31 provinces in China between 2005 and 2020. We calculated age-standardised mortality and YLL rates using the China 2020 census as the reference population. Average annual percent changes in age-standardised rates for mortality and YLLs were calculated to assess trends over the study period. Decomposition analysis was used to assess the drivers of changes in cancer-related death due to three explanatory components: population growth, population ageing, and age-specific mortality rates in China.

Findings The total number of cancer-related deaths increased by 21·6% to 2 337 772 and YLLs increased by 5·0% to 56 598 975 between 2005 and 2020. The three leading fatal cancer types remained stable for both sexes over the study period: tracheal, bronchus, and lung cancer; liver cancer; and stomach cancer. The fourth and fifth leading cancers also remained stable among males (oesophageal, and colon and rectum), while colon and rectum cancer replaced oesophageal cancer as the fourth and breast cancer replaced colon and rectum cancer as the fifth leading cause of cancer-related death among females. Age-standardised mortality rates and age-standardised YLL rates for almost all cancer types (except for prostate for male and multiple myeloma for female) decreased significantly in both sexes in urban areas. Age-standardised YLL rates increased for about half of all cancers for both sexes in rural areas. Leading fatal types were leukaemia and brain and nervous system cancer in younger groups (aged 0–19 years); liver, tracheal, bronchus, and lung, or breast cancers in middle-aged groups (aged 40–59 years); and tracheal, bronchus, and lung, liver, or stomach cancers in older adults (aged ≥60 years) in 2020. The leading causes of cancer-related mortality varied for each province, with tracheal, bronchus, and lung or liver cancer at the top in 30 provinces.

Interpretation The cancer burden in China appeared to be shifting towards that in high-income countries from 2005 to 2020. Adjustments to existing health plans and actions are needed to reduce the burdens of tracheal, bronchus, and lung cancer or other leading and emerging cancers.

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Introduction

Cancer is a major public health problem and a crucial contributor to disease burden worldwide.[1,2] On the basis of the 2020 WHO estimates, cancer is the first or second leading cause of death in most countries before the age of 70 years.[3,4] Cancer has been the leading cause of death since 2010 in China, with increasing incidence, mortality, and burden.[5,6] Global annual deaths from cancer were estimated at almost 10 million based on the Global Cancer Observatory (GLOBOCAN) 2020 database.[1] Moreover, China accounted for 30·13% of all cancer-related deaths worldwide.[1] Given ageing populations, cancer-related deaths are projected to continue rising, both globally and in China, creating a huge public health burden.[5,6]

China has made considerable efforts in cancer control and prevention in the past two decades.[6,7] Furthermore, China has recently proposed new health plans and specific actions, such as the Cancer Prevention and Control Implementation Plan 2019–22 in 2019,[8] the Action Plan to Improve the Quality of Oncology Diagnosis and Treatment in 2021,[9] and the Action Plan to Accelerate the Elimination of Cervical Cancer by 2030 in 2023,[10] to cope with the increasing cancer burden during the country's economic growth. Guided by the UN framework of the 2030 Agenda for Sustainable Development,[4] the State Council of China released a series of health plans between 2015 and 2020, including the Medium-to-Long-Term Plan for Prevention and

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文献摘要

LEE'S PHARM.
李氏大藥廠
Department of medicine and information
医学及信息部

研究目的

根据国家死亡率监测系统数据，评估了2005-2020年中国国家和地方癌症负担的变化。

研究方法

研究人员分析了中国31个省，根据国家死亡率监测系统分析了总体癌症死亡率和23个特定部位癌症死亡率，评估了2005-2020年中国国家和地方癌症负担的变化。

研究结果

在2020年，中国有2397772例癌症相关死亡（死亡率为170.80/10万；95%CI 170.58-171.02/10万）以及56598975癌症所致寿命损失年（YLL）。总体而言，2005年到2020年，癌症相关死亡人数增加了21.6%，YLL增加了5.0%。

研究结论

中国恶性肿瘤负担依旧较重，恶性肿瘤负担地区差异及性别差异明显，癌谱结构仍然呈现发达国家癌谱与发展中国家癌谱共存的局面，恶性肿瘤防控形势严峻。

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National and subnational trends in cancer burden in China, 2005-20

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2 研究方法

3 研究结果

4 研究结论

恶性肿瘤已成为严重威胁我国人群健康的主要疾病之一

根据2020年世界卫生组织（WHO）估计，癌症是大多数国家居民70岁以前死亡的第一或第二大原因。**自2010年以来，癌症一直是中国的主要死亡原因，其发病率、死亡率和负担都在不断增加。**

全球每年死于癌症的人数接近1,000万。此外，**中国占全球癌症相关死亡总数的30.15%。**鉴于人口老龄化，预计全球和中国的癌症相关死亡人数都将继续上升，这将造成巨大的公共卫生负担。

中国近几年在癌症防控方面提出了新的卫生计划和具体行动，如2019年的《癌症防治实施方案（2019-2022）》、2021年的《肿瘤诊疗质量提升行动计划》和2023年的《加速消除宫颈癌行动计划（2003-2030年）》，以应对国家经济增长过程中日益加重的癌症负担。

国务院在2015-2020年间发布了一系列卫生规划，包括《中国防治慢性病中长期规划（2017-2025年）》和《健康中国2030》。此外，中国还制定了一项重要目标：**到2025年，癌症总体5年生存率提高10%；到2030年，非传染性疾病（包括癌症）导致的过早死亡人数减少30%。**

National and subnational trends in cancer burden in China, 2005-20

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资料与方法

资料来源

癌症相关死亡数据提取自全国死亡率监测系统，按年龄和性别分层的监测人群数据摘自中国国家统计局。本研究估计了2005~2020年中国31个省份所有癌症和23种癌症的死亡率和寿命损失年数（YLL）。

统计学方法

使用中国2020年人口普查作为参考人群计算年龄标准化死亡率（ASMR）和YLL率。计算死亡率和YLL年龄标准化率的平均年变化百分比，以评估研究期间的变化趋势。

National and subnational trends in cancer burden in China, 2005-20

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与2005年相比，2020年与癌症相关的死亡人数共增加21.6%，年均死亡率增加5.0%

- 到2020年，中国癌症相关死亡人数为2,397,772例（死亡率为170.80/10万）， 癌症致死病例为56,598,975 例。
- 与2005年相比，2020年与癌症相关的死亡人数总共增加了21.6%，年均死亡率增加了5.0%。

	Both sexes				Males				Females			
	Deaths (thousands)	Mortality rate (per 100 000)	YLLs (thousands)	YLL rate (per 100 000)	Deaths (thousands)	Mortality rate (per 100 000)	YLLs (thousands)	YLL rate (per 100 000)	Deaths (thousands)	Mortality rate (per 100 000)	YLLs (thousands)	YLL rate (per 100 000)
All sites	2397·77	170·80 (170·58–171·02)	56598·98	4031·72 (4030·64–4032·79)	1565·70	218·31 (217·97–218·66)	37240·09	5192·56 (5190·85–5194·27)	832·07	121·18 (120·92–121·44)	19358·89	2819·27 (2818·00–2820·55)

男性和女性的TOP5高致死癌症

	Both sexes				Males				Females			
	Deaths (thousands)	Mortality rate (per 100 000)	YLLs (thousands)	YLL rate (per 100 000)	Deaths (thousands)	Mortality rate (per 100 000)	YLLs (thousands)	YLL rate (per 100 000)	Deaths (thousands)	Mortality rate (per 100 000)	YLLs (thousands)	YLL rate (per 100 000)
All sites	2397·77	170·80 (170·58–171·02)	56 598·98	4031·72 (4030·64–4032·79)	1565·70	218·31 (217·97–218·66)	37 240·09	5192·56 (5190·85–5194·27)	832·07	121·18 (120·92–121·44)	19 358·89	2819·27 (2818·00–2820·55)
Tracheal, bronchus, and lung	766·14	54·57 (54·45–54·70)	16 836·39	1199·31 (1198·73–1199·88)	538·24	75·05 (74·85–75·25)	12 048·42	1679·97 (1679·01–1680·93)	227·90	33·19 (33·05–33·33)	4787·97	697·28 (696·66–697·91)
Liver	367·72	26·19 (26·11–26·28)	9972·86	710·40 (709·95–710·84)	274·76	38·31 (38·17–38·46)	7821·93	1090·65 (1089·88–1091·42)	92·96	13·54 (13·45–13·63)	2150·93	313·24 (312·83–313·66)
Stomach	291·20	20·74 (20·67–20·82)	6300·29	448·79 (448·44–449·14)	199·66	27·84 (27·72–27·96)	4378·38	610·50 (609·93–611·07)	91·53	13·33 (13·24–13·42)	1921·91	279·89 (279·49–280·29)
Colon and rectum	182·43	13·00 (12·94–13·05)	3884·25	276·69 (276·41–276·96)	104·91	14·63 (14·54–14·72)	2277·35	317·54 (317·13–317·96)	77·52	11·29 (11·21–11·37)	1606·90	234·02 (233·65–234·38)
Oesophageal	173·29	12·34 (12·29–12·40)	3616·28	257·60 (257·33–257·86)	130·35	18·18 (18·08–18·27)	2880·62	401·66 (401·19–402·12)	42·94	6·25 (6·19–6·31)	735·66	107·14 (106·89–107·38)
Pancreatic	100·43	7·15 (7·11–7·20)	2166·35	154·32 (154·11–154·52)	63·10	8·80 (8·73–8·87)	1391·33	194·00 (193·68–194·32)	37·32	5·44 (5·38–5·49)	775·02	112·87 (112·62–113·12)
Breast	57·06	4·06 (4·03–4·10)	1758·27	125·25 (125·06–125·43)	0·66	0·09 (0·09–0·10)	12·30	1·72 (1·69–1·75)	56·40	8·21 (8·15–8·28)	1745·97	254·27 (253·89–254·65)
Leukaemia	54·86	3·91 (3·88–3·94)	2048·87	145·95 (145·75–146·15)	31·79	4·43 (4·38–4·48)	1153·21	160·80 (160·50–161·09)	23·08	3·36 (3·32–3·40)	895·66	130·44 (130·17–130·71)
Brain and nervous system	54·22	3·86 (3·83–3·89)	1710·90	121·87 (121·69–122·06)	30·68	4·28 (4·23–4·33)	1008·41	140·61 (140·33–140·88)	23·53	3·43 (3·38–3·47)	702·49	102·30 (102·07–102·54)
Cervical	44·75	3·19 (3·16–3·22)	1356·05	96·60 (96·43–96·76)	..	..	..	..	44·75	6·52 (6·46–6·58)	1356·05	197·48 (197·15–197·82)
Lymphoma	39·59	2·82 (2·79–2·85)	1005·80	71·65 (71·51–71·79)	26·25	3·66 (3·62–3·70)	680·13	94·83 (94·61–95·06)	13·34	1·94 (1·91–1·98)	325·67	47·43 (47·27–47·59)
Prostate	30·81	2·19 (2·17–2·22)	483·93	34·47 (34·37–34·57)	30·81	4·30 (4·25–4·34)	483·93	67·48 (67·29–67·67)	..	..	..	..
Bladder	29·73	2·12 (2·09–2·14)	492·86	35·11 (35·01–35·21)	24·03	3·35 (3·31–3·39)	405·95	56·60 (56·43–56·78)	5·70	0·83 (0·81–0·85)	86·91	12·66 (12·57–12·74)
Gallbladder and biliary tract	28·14	2·00 (1·98–2·03)	553·01	39·39 (39·29–39·50)	13·47	1·88 (1·85–1·91)	275·71	38·44 (38·30–38·59)	14·67	2·14 (2·10–2·17)	277·30	40·38 (40·23–40·53)
Nasopharynx	24·54	1·75 (1·73–1·77)	677·83	48·28 (48·17–48·40)	18·40	2·56 (2·53–2·60)	517·44	72·15 (71·95–72·35)	6·14	0·89 (0·87–0·92)	160·38	23·36 (23·24–23·47)
Ovarian	20·88	1·49 (1·47–1·51)	595·59	42·43 (42·32–42·53)	..	..	..	..	20·88	3·04 (3·00–3·08)	595·59	86·74 (86·52–86·96)
Larynx	16·34	1·16 (1·15–1·18)	359·28	25·59 (25·51–25·68)	14·19	1·98 (1·95–2·01)	321·75	44·86 (44·71–45·02)	2·15	0·31 (0·30–0·33)	37·53	5·47 (5·41–5·52)
Kidney	14·75	1·05 (1·03–1·07)	304·51	21·69 (21·61–21·77)	9·09	1·27 (1·24–1·29)	199·61	27·83 (27·71–27·95)	5·66	0·82 (0·80–0·85)	104·91	15·28 (15·19–15·37)
Lip and oral cavity	10·62	0·76 (0·74–0·77)	234·72	16·72 (16·65–16·79)	7·48	1·04 (1·02–1·07)	175·64	24·49 (24·38–24·60)	3·14	0·46 (0·44–0·47)	59·08	8·60 (8·53–8·67)
Skin	10·08	0·72 (0·70–0·73)	173·62	12·37 (12·31–12·43)	5·25	0·73 (0·71–0·75)	97·48	13·59 (13·51–13·68)	4·82	0·70 (0·68–0·72)	76·14	11·09 (11·01–11·17)
Multiple myeloma	8·12	0·58 (0·57–0·59)	176·61	12·58 (12·52–12·64)	5·01	0·70 (0·68–0·72)	109·17	15·22 (15·13–15·31)	3·11	0·45 (0·44–0·47)	67·44	9·82 (9·75–9·90)
Thyroid	3·92	0·28 (0·27–0·29)	73·66	5·25 (5·21–5·28)	1·54	0·21 (0·20–0·23)	30·46	4·25 (4·20–4·29)	2·38	0·35 (0·33–0·36)	43·20	6·29 (6·23–6·35)
Other neoplasms	68·17	4·86 (4·82–4·89)	1817·05	129·43 (129·25–129·62)	36·02	5·02 (4·97–5·07)	970·88	135·37 (135·10–135·64)	32·15	4·68 (4·63–4·73)	846·17	123·23 (122·97–123·49)

YLLs=years of life lost.

Table 1: Mortality and YLLs for 23 cancer types in China by sex, 2020

- 就男性而言，2020年死亡率最高的5种癌症分别是肺癌（75.05/10万）、肝癌（38.31/10万）、胃癌（27.84/10万）、食管癌（18.18/10万）以及结直肠癌（14.63/10万）。
- 就女性而言，2020年按死亡率排名前五的癌症分别是肺癌（33.19/10万）、肝癌（13.54/10万）、胃癌（13.33/10万）、结直肠癌（11.29/10万）以及乳腺癌（8.21/10万）。
- 其中，**女性宫颈癌的死亡率为6.52/10万，居女性癌症死亡率第六位**。

2005~2020年间宫颈癌死亡人数排名增加

A

Major cancer types 2005	Major cancer types 2020	AAPC in number of all-age deaths (95% CI)	AAPC in age-standardised mortality rate per 100000 population (95% CI)	AAPC in number of all-age YLLs (95% CI)	AAPC in age-standardised YLLs rate per 100000 population (95% CI)
1 Tracheal, bronchus, and lung	1 Tracheal, bronchus, and lung	3·02 (2·85 to 3·19)	−0·22 (−0·28 to −0·16)	2·20 (1·85 to 2·55)	−0·70 (−0·73 to −0·67)
2 Liver	2 Liver	−0·39 (−0·52 to −0·26)	−2·99 (−3·06 to −2·93)	−1·07 (−1·52 to −0·63)	−3·30 (−3·35 to −3·25)
3 Stomach	3 Stomach	−0·67 (−0·83 to −0·52)	−3·76 (−3·82 to −3·70)	−1·57 (−1·87 to −1·27)	−4·32 (−4·39 to −4·25)
4 Oesophageal	4 Oesophageal	−0·28 (−0·43 to −0·12)	−3·46 (−3·60 to −3·33)	−1·15 (−1·32 to −0·99)	−3·94 (−4·04 to −3·85)
5 Colon and rectum	5 Colon and rectum	3·61 (3·44 to 3·78)	0·31 (0·22 to 0·40)	2·60 (2·34 to 2·86)	−0·21 (−0·26 to −0·15)
6 Leukaemia	6 Pancreatic	4·36 (4·19 to 4·53)	0·95 (0·90 to 1·01)	3·83 (3·46 to 4·20)	0·67 (0·61 to 0·74)
7 Pancreatic	7 Leukaemia	−0·53 (−0·66 to −0·40)	−1·80 (−1·86 to −1·74)	−2·63 (−2·94 to −2·33)	−3·02 (−3·05 to −2·98)
8 Brain and nervous system	8 Prostate	5·66 (4·95 to 6·38)	1·70 (1·57 to 1·83)	5·06 (4·81 to 5·31)	1·28 (1·17 to 1·38)
9 Lymphoma	9 Brain and nervous system	1·02 (0·90 to 1·14)	−1·20 (−1·25 to −1·16)	−0·16 (−0·33 to 0·01)	−1·46 (−1·53 to −1·39)
10 Nasopharynx	10 Lymphoma	3·07 (2·92 to 3·22)	0·33 (0·25 to 0·41)	1·58 (1·47 to 1·69)	−0·32 (−0·38 to −0·27)
11 Bladder	11 Bladder	3·84 (3·59 to 4·08)	0·12 (0·10 to 0·15)	2·58 (2·37 to 2·79)	−0·65 (−0·67 to −0·63)
12 Prostate	12 Nasopharynx	0·70 (0·28 to 1·13)	−2·01 (−2·11 to −1·91)	−0·17 (−0·51 to 0·17)	−2·48 (−2·59 to −2·37)
13 Larynx	13 Larynx	3·18 (2·94 to 3·42)	−0·06 (−0·08 to −0·04)	2·30 (1·98 to 2·64)	−0·56 (−0·62 to −0·51)
14 Gallbladder and biliary tract	14 Gallbladder and biliary tract	3·55 (3·36 to 3·74)	−0·02 (−0·06 to 0·03)	2·92 (2·68 to 3·17)	−0·25 (−0·29 to −0·22)
15 Kidney	15 Kidney	2·84 (2·59 to 3·10)	−0·33 (−0·38 to −0·28)	1·43 (1·04 to 1·82)	−1·19 (−1·29 to −1·09)
16 Lip and oral cavity	16 Lip and oral cavity	3·39 (3·24 to 3·53)	0·00 (−0·04 to 0·04)	3·00 (2·54 to 3·46)	−0·10 (−0·21 to 0·02)
17 Skin	17 Skin	1·69 (1·47 to 1·91)	−1·83 (−1·86 to −1·80)	0·09 (−0·24 to 0·43)	−2·60 (−2·68 to −2·52)
18 Multiple myeloma	18 Multiple myeloma	6·18 (6·01 to 6·36)	2·82 (2·65 to 2·99)	4·92 (4·58 to 5·26)	2·23 (2·04 to 2·41)
19 Thyroid	19 Thyroid	2·89 (2·70 to 3·07)	−0·51 (−0·59 to −0·43)	1·90 (1·58 to 2·21)	−1·07 (−1·09 to −1·05)
20 Breast	20 Breast	0·23 (0·04 to 0·42)	−2·71 (−2·83 to −2·59)	−2·18 (−2·76 to −1·60)	−4·38 (−4·52 to −4·25)

B

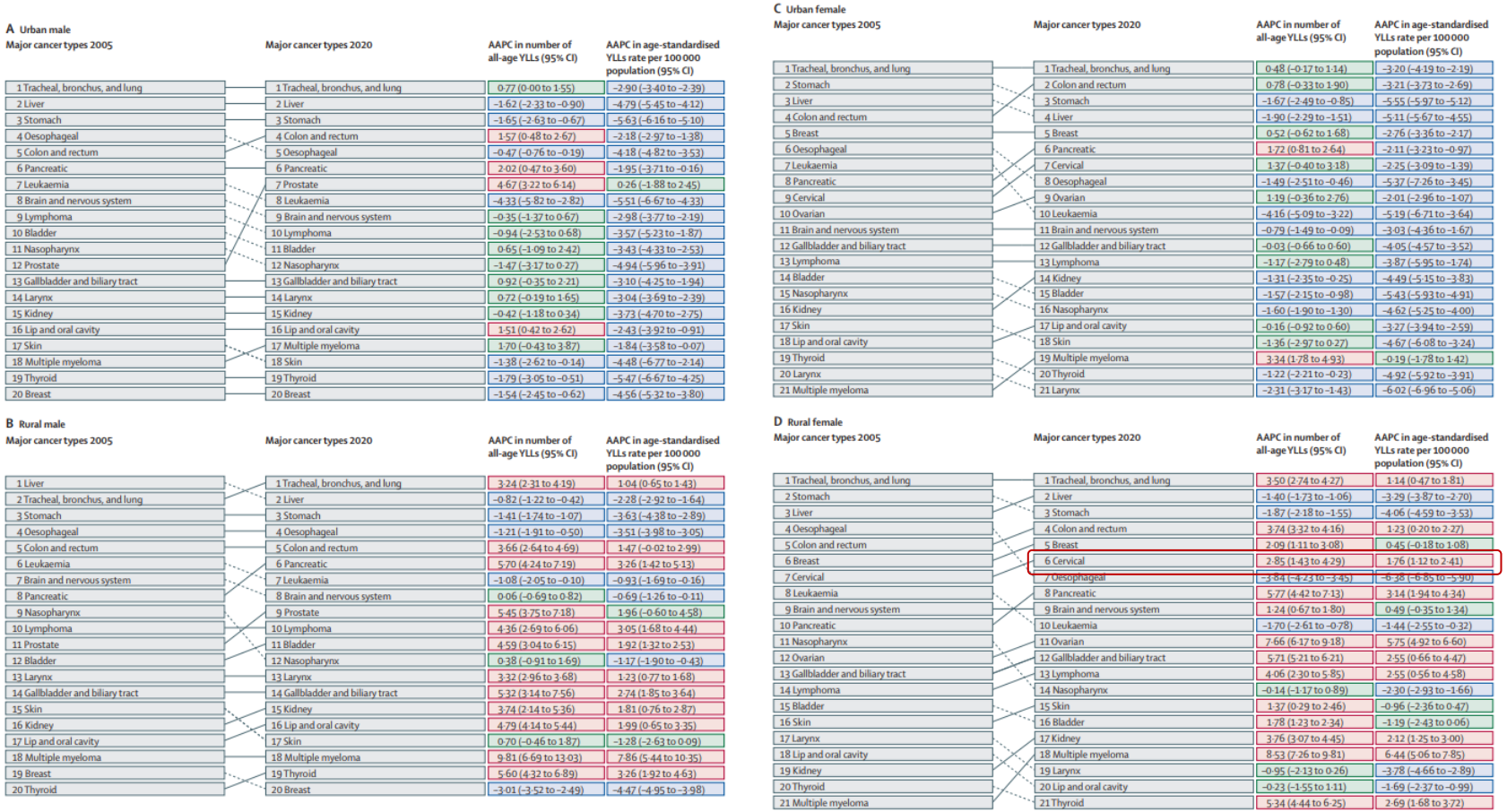
Major cancer types 2005	Major cancer types 2020	AAPC in number of all-age deaths (95% CI)	AAPC in age-standardised mortality rate per 100000 population (95% CI)	AAPC in number of all-age YLLs (95% CI)	AAPC in age-standardised YLLs rate per 100000 population (95% CI)
1 Tracheal, bronchus, and lung	1 Tracheal, bronchus, and lung	2·94 (2·76 to 3·13)	−0·45 (−0·51 to −0·39)	2·15 (1·89 to 2·40)	−0·87 (−0·92 to −0·83)
2 Stomach	2 Liver	−0·68 (−0·80 to −0·57)	−3·67 (−3·78 to −3·55)	−1·51 (−1·85 to −1·17)	−4·13 (−4·20 to −4·06)
3 Liver	3 Stomach	−1·27 (−1·41 to −1·12)	−4·52 (−4·60 to −4·45)	−1·83 (−2·03 to −1·63)	−4·70 (−4·76 to −4·63)
4 Oesophageal	4 Colon and rectum	2·86 (2·65 to 3·08)	−0·57 (−0·65 to −0·49)	2·04 (1·86 to 2·23)	−0·92 (−0·94 to −0·89)
5 Colon and rectum	5 Breast	1·82 (1·51 to 2·13)	−1·03 (−1·07 to −0·98)	1·48 (1·23 to 1·73)	−0·91 (−0·93 to −0·89)
6 Breast	6 Cervical	2·72 (2·43 to 3·00)	−0·15 (−0·23 to −0·08)	2·47 (2·15 to 2·79)	0·05 (−0·01 to 0·11)
7 Cervical	7 Oesophageal	−1·88 (−2·08 to −1·68)	−5·32 (−5·47 to −5·17)	−3·10 (−3·40 to −2·79)	−6·32 (−6·44 to −6·20)
8 Leukaemia	8 Pancreatic	4·17 (3·95 to 4·38)	0·67 (0·62 to 0·72)	3·66 (3·36 to 3·96)	0·41 (0·34 to 0·47)
9 Pancreatic	9 Brain and nervous system	1·91 (1·77 to 2·05)	−0·52 (−0·56 to −0·48)	0·35 (0·18 to 0·53)	−1·09 (−1·12 to −1·05)
10 Brain and nervous system	10 Leukaemia	−0·94 (−1·32 to −0·55)	−2·03 (−2·08 to −1·98)	−2·92 (−3·16 to −2·69)	−3·07 (−3·10 to −3·03)
11 Ovarian	11 Ovarian	4·28 (3·93 to 4·63)	1·21 (1·12 to 1·31)	3·86 (3·61 to 4·11)	1·26 (1·16 to 1·36)
12 Gallbladder and biliary tract	12 Gallbladder and biliary tract	3·08 (2·82 to 3·33)	−0·52 (−0·56 to −0·48)	2·41 (2·18 to 2·65)	−0·86 (−0·97 to −0·76)
13 Lymphoma	13 Lymphoma	2·99 (2·80 to 3·18)	−0·02 (−0·08 to 0·05)	1·33 (1·03 to 1·62)	−0·79 (−0·85 to −0·72)
14 Nasopharynx	14 Nasopharynx	−0·01 (−0·47 to 0·46)	−2·93 (−3·12 to −2·74)	−0·66 (−1·07 to −0·24)	−3·20 (−3·38 to −3·02)
15 Bladder	15 Bladder	1·48 (1·22 to 1·74)	−2·10 (−2·13 to −2·07)	0·10 (−0·16 to 0·37)	−3·19 (−3·29 to −3·09)
16 Kidney	16 Kidney	3·16 (2·91 to 3·41)	−0·11 (−0·14 to −0·07)	0·59 (0·31 to 0·87)	−1·69 (−1·77 to −1·61)
17 Skin	17 Skin	2·29 (1·81 to 2·78)	−1·25 (−1·29 to −1·21)	0·26 (−0·08 to 0·61)	−2·41 (−2·57 to −2·24)
18 Lip and oral cavity	18 Lip and oral cavity	1·84 (1·58 to 2·10)	−1·47 (−1·51 to −1·43)	0·18 (−0·09 to 0·45)	−2·37 (−2·46 to −2·27)
19 Larynx	19 Multiple myeloma	7·13 (6·88 to 7·37)	3·69 (3·52 to 3·85)	5·61 (5·23 to 6·00)	2·80 (2·64 to 2·96)
20 Thyroid	20 Thyroid	2·86 (2·62 to 3·11)	−0·69 (−0·75 to −0·64)	2·07 (1·83 to 2·32)	−1·15 (−1·22 to −1·08)
21 Multiple myeloma	21 Larynx	−0·24 (−0·42 to −0·05)	−3·68 (−3·79 to −3·57)	−1·61 (−1·74 to −1·47)	−4·70 (−4·81 to −4·59)

2005–2020年中国分性别不同癌症类型死亡顺位变化

- 2005-2020年间，大多数癌症的死亡率显著下降，死亡人数有所增加。位居榜首的气管癌、支气管癌和肺癌相关死亡的比例有所增加，这主要归因于人口增长和人口老龄化。
- 另外，**2005-2020年间女性宫颈癌患者死亡人数从第七位上升至第六位。**

农村地区的男女癌症死亡率和年均死亡率均高于城市地区

- 农村地区的男女癌症死亡率和年均死亡率均高于城市地区。2005~2020年，城市地区约3/4的癌症类型的死亡人数增加，这主要归因于人口老龄化，其次是人口增长。
- 在农村地区，发现男性11/20种癌症类型和女性10/21种癌症类型（**含宫颈癌**）的**年龄标准化YLL率上升**。农村地区约4/5的癌症类型的死亡人数增加，这主要归因于特定年龄死亡率的上升和人口老龄化。



A Urban male

Major cancer types 2005	Major cancer types 2020	AAPC in number of all-age YLLs (95% CI)	AAPC in age-standardised YLLs rate per 100 000 population (95% CI)
1 Tracheal, bronchus, and lung	1 Tracheal, bronchus, and lung	0·77 (0·00 to 1·55)	−2·90 (−3·40 to −2·39)
2 Liver	2 Liver	−1·62 (−2·33 to −0·90)	−4·79 (−5·45 to −4·12)
3 Stomach	3 Stomach	−1·65 (−2·63 to −0·67)	−5·63 (−6·16 to −5·10)
4 Oesophageal	4 Colon and rectum	1·57 (0·48 to 2·67)	−2·18 (−2·97 to −1·38)
5 Colon and rectum	5 Oesophageal	−0·47 (−0·76 to −0·19)	−4·18 (−4·82 to −3·53)
6 Pancreatic	6 Pancreatic	2·02 (0·47 to 3·60)	−1·95 (−3·71 to −0·16)
7 Leukaemia	7 Prostate	4·67 (3·22 to 6·14)	0·26 (−1·88 to 2·45)
8 Brain and nervous system	8 Leukaemia	−4·33 (−5·82 to −2·82)	−5·51 (−6·67 to −4·33)
9 Lymphoma	9 Brain and nervous system	−0·35 (−1·37 to 0·67)	−2·98 (−3·77 to −2·19)
10 Bladder	10 Lymphoma	−0·94 (−2·53 to 0·68)	−3·57 (−5·23 to −1·87)
11 Nasopharynx	11 Bladder	0·65 (−1·09 to 2·42)	−3·43 (−4·33 to −2·53)
12 Prostate	12 Nasopharynx	−1·47 (−3·17 to 0·27)	−4·94 (−5·96 to −3·91)
13 Gallbladder and biliary tract	13 Gallbladder and biliary tract	0·92 (−0·35 to 2·21)	−3·10 (−4·25 to −1·94)
14 Larynx	14 Larynx	0·72 (−0·19 to 1·65)	−3·04 (−3·69 to −2·39)
15 Kidney	15 Kidney	−0·42 (−1·18 to 0·34)	−3·73 (−4·70 to −2·75)
16 Lip and oral cavity	16 Lip and oral cavity	1·51 (0·42 to 2·62)	−2·43 (−3·92 to −0·91)
17 Skin	17 Multiple myeloma	1·70 (−0·43 to 3·87)	−1·84 (−3·58 to −0·07)
18 Multiple myeloma	18 Skin	−1·38 (−2·62 to −0·14)	−4·48 (−6·77 to −2·14)
19 Thyroid	19 Thyroid	−1·79 (−3·05 to −0·51)	−5·47 (−6·67 to −4·25)
20 Breast	20 Breast	−1·54 (−2·45 to −0·62)	−4·56 (−5·32 to −3·80)

B Rural male

Major cancer types 2005	Major cancer types 2020	AAPC in number of all-age YLLs (95% CI)	AAPC in age-standardised YLLs rate per 100 000 population (95% CI)
1 Liver	1 Tracheal, bronchus, and lung	3·24 (2·31 to 4·19)	1·04 (0·65 to 1·43)
2 Tracheal, bronchus, and lung	2 Liver	−0·82 (−1·22 to −0·42)	−2·28 (−2·92 to −1·64)
3 Stomach	3 Stomach	−1·41 (−1·74 to −1·07)	−3·63 (−4·38 to −2·89)
4 Oesophageal	4 Oesophageal	−1·21 (−1·91 to −0·50)	−3·51 (−3·98 to −3·05)
5 Colon and rectum	5 Colon and rectum	3·66 (2·64 to 4·69)	1·47 (−0·02 to 2·99)
6 Leukaemia	6 Pancreatic	5·70 (4·24 to 7·19)	3·26 (1·42 to 5·13)
7 Brain and nervous system	7 Leukaemia	−1·08 (−2·05 to −0·10)	−0·93 (−1·69 to −0·16)
8 Pancreatic	8 Brain and nervous system	0·06 (−0·69 to 0·82)	−0·69 (−1·26 to −0·11)
9 Nasopharynx	9 Prostate	5·45 (3·75 to 7·18)	1·96 (−0·60 to 4·58)
10 Lymphoma	10 Lymphoma	4·36 (2·69 to 6·06)	3·05 (1·68 to 4·44)
11 Prostate	11 Bladder	4·59 (3·04 to 6·15)	1·92 (1·32 to 2·53)
12 Bladder	12 Nasopharynx	0·38 (−0·91 to 1·69)	−1·17 (−1·90 to −0·43)
13 Larynx	13 Larynx	3·32 (2·96 to 3·68)	1·23 (0·77 to 1·68)
14 Gallbladder and biliary tract	14 Gallbladder and biliary tract	5·32 (3·14 to 7·56)	2·74 (1·85 to 3·64)
15 Skin	15 Kidney	3·74 (2·14 to 5·36)	1·81 (0·76 to 2·87)
16 Kidney	16 Lip and oral cavity	4·79 (4·14 to 5·44)	1·99 (0·65 to 3·35)
17 Lip and oral cavity	17 Skin	0·70 (−0·46 to 1·87)	−1·28 (−2·63 to 0·09)
18 Multiple myeloma	18 Multiple myeloma	9·81 (6·69 to 13·03)	7·86 (5·44 to 10·35)
19 Breast	19 Thyroid	5·60 (4·32 to 6·89)	3·26 (1·92 to 4·63)
20 Thyroid	20 Breast	−3·01 (−3·52 to −2·49)	−4·47 (−4·95 to −3·98)

C Urban female

Major cancer types 2005	Major cancer types 2020	AAPC in number of all-age YLLs (95% CI)	AAPC in age-standardised YLLs rate per 100 000 population (95% CI)
1 Tracheal, bronchus, and lung	1 Tracheal, bronchus, and lung	0·48 (−0·17 to 1·14)	−3·20 (−4·19 to −2·19)
2 Stomach	2 Colon and rectum	0·78 (−0·33 to 1·90)	−3·21 (−3·73 to −2·69)
3 Liver	3 Stomach	−1·67 (−2·49 to −0·85)	−5·55 (−5·97 to −5·12)
4 Colon and rectum	4 Liver	−1·90 (−2·29 to −1·51)	−5·11 (−5·67 to −4·55)
5 Breast	5 Breast	0·52 (−0·62 to 1·68)	−2·76 (−3·36 to −2·17)
6 Oesophageal	6 Pancreatic	1·72 (0·81 to 2·64)	−2·11 (−3·23 to −0·97)
7 Leukaemia	7 Cervical	1·37 (−0·40 to 3·18)	−2·25 (−3·09 to −1·39)
8 Pancreatic	8 Oesophageal	−1·49 (−2·51 to −0·46)	−5·37 (−7·26 to −3·45)
9 Cervical	9 Ovarian	1·19 (−0·36 to 2·76)	−2·01 (−2·96 to −1·07)
10 Ovarian	10 Leukaemia	−4·16 (−5·09 to −3·22)	−5·19 (−6·71 to −3·64)
11 Brain and nervous system	11 Brain and nervous system	−0·79 (−1·49 to −0·09)	−3·03 (−4·36 to −1·67)
12 Gallbladder and biliary tract	12 Gallbladder and biliary tract	−0·03 (−0·66 to 0·60)	−4·05 (−4·57 to −3·52)
13 Lymphoma	13 Lymphoma	−1·17 (−2·79 to 0·48)	−3·87 (−5·95 to −1·74)
14 Bladder	14 Kidney	−1·31 (−2·35 to −0·25)	−4·49 (−5·15 to −3·83)
15 Nasopharynx	15 Bladder	−1·57 (−2·15 to −0·98)	−5·43 (−5·93 to −4·91)
16 Kidney	16 Nasopharynx	−1·60 (−1·90 to −1·30)	−4·62 (−5·25 to −4·00)
17 Skin	17 Lip and oral cavity	−0·16 (−0·92 to 0·60)	−3·27 (−3·94 to −2·59)
18 Lip and oral cavity	18 Skin	−1·36 (−2·97 to 0·27)	−4·67 (−6·08 to −3·24)
19 Thyroid	19 Multiple myeloma	3·34 (1·78 to 4·93)	−0·19 (−1·78 to 1·42)
20 Larynx	20 Thyroid	−1·22 (−2·21 to −0·23)	−4·92 (−5·92 to −3·91)
21 Multiple myeloma	21 Larynx	−2·31 (−3·17 to −1·43)	−6·02 (−6·96 to −5·06)

D Rural female

Major cancer types 2005	Major cancer types 2020	AAPC in number of all-age YLLs (95% CI)	AAPC in age-standardised YLLs rate per 100 000 population (95% CI)
1 Tracheal, bronchus, and lung	1 Tracheal, bronchus, and lung	3·50 (2·74 to 4·27)	1·14 (0·47 to 1·81)
2 Stomach	2 Liver	−1·40 (−1·73 to −1·06)	−3·29 (−3·87 to −2·70)
3 Liver	3 Stomach	−1·87 (−2·18 to −1·55)	−4·06 (−4·59 to −3·53)
4 Oesophageal	4 Colon and rectum	3·74 (3·32 to 4·16)	1·23 (0·20 to 2·27)
5 Colon and rectum	5 Breast	2·09 (1·11 to 3·08)	0·45 (−0·18 to 1·08)
6 Breast	6 Cervical	2·85 (1·43 to 4·29)	1·76 (1·12 to 2·41)
7 Cervical	7 Oesophageal	−3·84 (−4·23 to −3·45)	−6·38 (−6·85 to −5·90)
8 Leukaemia	8 Pancreatic	5·77 (4·42 to 7·13)	3·14 (1·94 to 4·34)
9 Brain and nervous system	9 Brain and nervous system	1·24 (0·67 to 1·80)	0·49 (−0·35 to 1·34)
10 Pancreatic	10 Leukaemia	−1·70 (−2·61 to −0·78)	−1·44 (−2·55 to −0·32)
11 Nasopharynx	11 Ovarian	7·66 (6·17 to 9·18)	5·75 (4·92 to 6·60)
12 Ovarian	12 Gallbladder and biliary tract	5·71 (5·21 to 6·21)	2·55 (0·66 to 4·47)
13 Gallbladder and biliary tract	13 Lymphoma	4·06 (2·30 to 5·85)	2·55 (0·56 to 4·58)
14 Lymphoma	14 Nasopharynx	−0·14 (−1·17 to 0·89)	−2·30 (−2·93 to −1·66)
15 Bladder	15 Skin	1·37 (0·29 to 2·46)	−0·96 (−2·36 to 0·47)
16 Skin	16 Bladder	1·78 (1·23 to 2·34)	−1·19 (−2·43 to 0·06)
17 Larynx	17 Kidney	3·76 (3·07 to 4·45)	2·12 (1·25 to 3·00)
18 Lip and oral cavity	18 Multiple myeloma	8·53 (7·26 to 9·81)	6·44 (5·06 to 7·85)
19 Kidney	19 Larynx	−0·95 (−2·13 to 0·26)	−3·78 (−4·66 to −2·89)
20 Thyroid	20 Lip and oral cavity	−0·23 (−1·55 to 1·11)	−1·69 (−2·37 to −0·99)
21 Multiple myeloma	21 Thyroid	5·34 (4·44 to 6·25)	2·69 (1·68 to 3·72)

农村女性宫颈癌年龄标化YLL率上升

癌症相关死亡的TOP10类型，在不同年龄组之间存在很大差异

LEE'S PHARM.
李 氏 大 藥 廠
Department of medicine and information
医 学 及 信 息 部

- 癌症相关死亡的十大主要原因在不同年龄组之间存在很大差异，中青年的死亡率远低于老年人。

女性人群

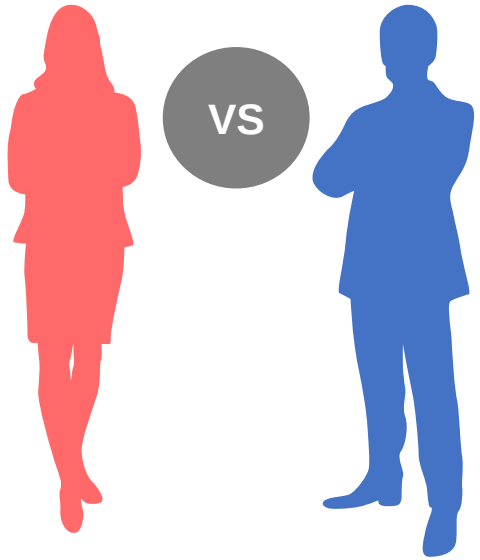
0-19 岁：白血病，脑和神经系统癌症，肝癌

20-39岁：乳腺癌，白血病，**宫颈癌**

40-59岁：气管、支气管和肺癌，乳腺癌，**宫颈癌**

60-79岁：气管、支气管和肺癌，肝癌，胃癌

≥80岁：气管、支气管和肺癌，胃癌，结直肠癌



男性人群

0-19 岁：白血病，脑和神经系统癌症，肝癌

20-39岁：肝癌，白血病，气管、支气管和肺癌

40-59岁：肝癌，气管、支气管和肺癌，胃癌

60-79岁：气管、支气管和肺癌，肝癌，胃癌

≥80岁：气管、支气管和肺癌，胃癌，肝癌

女性人群和男性人群中不同年龄段的TOP3致死癌症

National and subnational trends in cancer burden in China, 2005-20

1 研究背景

2 研究方法

3 研究结果

4 研究结论

结论

- 从2005年到2020年，中国的癌症负担似乎将向高收入国家转变，在癌症死亡率和癌症相关死亡的主要原因方面，性别、年龄、城市和农村地区之间存在巨大差异。
- 中国政府应尽一切努力推广具有成本效益的癌症筛查和预防计划，实施严格的烟草控制政策，并致力于通过教育提高人们对健康生活方式的认识。需要调整国家癌症控制计划，以减轻各省肺癌及其他新发癌症的负担。

谢谢关注！

thanks for your attention.