



ELSEVIER

Contents lists available at ScienceDirect

Lung Cancer

journal homepage: www.elsevier.com/locate/lungcan

Gender susceptibility for cigarette smoking-attributable lung cancer: A systematic review and meta-analysis



Yunxian Yu^{a,c}, Hui Liu^{a,c}, Shuangshuang Zheng^{a,c}, Zheyuan Ding^{a,c}, Zexin Chen^{a,c},
Wen Jin^{a,c}, Lijuan Wang^{a,c}, Zhaopin Wang^{a,c}, Ying Fei^{a,c}, Shanchun Zhang^{a,c},
Kejing Ying^b, Ruifeng Zhang^{b,*}

^a Department of Epidemiology & Health Statistics, School of Public Health, School of Medicine, Zhejiang University, Hangzhou 310058, China

^b Department of Respiratory Medicine, Sir Run Run Shaw Hospital, Medical School of Zhejiang University, Hangzhou 310016, China

^c Chronic Disease Research Institute, School of Public Health, School of Medicine, Zhejiang University, Hangzhou 310058, China

ARTICLE INFO

Article history:

Received 2 April 2014

Received in revised form 10 June 2014

Accepted 7 July 2014

Keywords:

Lung cancer
Gender susceptibility
Cigarette smoking
Systematic review
Ratio of relative risk
Meta-analysis

ABSTRACT

Objectives: As the primary cause of lung cancer, whether smoking confers the same risk of lung cancer for women as men is unclear. Therefore, we aimed to compare male and female susceptibility for cigarette smoking-attributable lung cancer.

Methods: A systematic review and meta-analysis was conducted by searching articles published up to July 2013 in three online databases (MEDLINE, EMBASE, and Cochrane Database). All studies estimated the association of cigarette smoking with the risk of lung cancer between men and women, respectively. A random effects model with inverse variance weighting was used to pool data. Male to female ratio of relative risk (RRR) was calculated to compare male and female susceptibility for cigarette smoking-attributable lung cancer.

Results: 47 articles containing 404,874 individuals were included in the final analysis. Compared with non-smokers, male to female RRR was 1.61 (95%CI: 1.37, 1.89) among current smokers. Based on pathological type, adenocarcinoma had the highest RRR (1.42; 95%CI: 0.86, 2.35), followed by squamous cancer and small cell lung cancer. Furthermore, compared with non-smoking men, current smoking men had higher risk of lung cancer than women in spite of smoking quantity, smoking duration or years since quitting.

Conclusions: These findings indicated that males had higher susceptibility for cigarette smoking-attributable lung cancer than females. It is contradicted with traditional opinion that females would be more easily suffered from cigarette smoking-attributable health problems than males. Hence, tobacco control is very crucial in both males and females.

© 2014 Elsevier Ireland Ltd. All rights reserved.

1. Introduction

Epidemiological evidence indicates that globally one billion men and 250 million women smoke every day [1]. Up to half of tobacco users will die from a tobacco-related disease. Cigarette smoking is one of the main causes of lung cancer. Till now, lung cancer is the leading cause of cancer morbidity and mortality worldwide, with almost 1.6 million new cases of lung cancer per year (13% of total cancer morbidity) and 1.4 million deaths per year (18% of total cancer mortality) [2].

Thun et al. [3] analyzed seven US population surveys and found that relative risk for lung cancer death among male smokers was almost five times as high as that among female smokers in the 1959–1965 cohort. But in the 2000–2010 cohort, the risk of death causing by smoking-attributable lung cancer had equalized in men and women, in spite of worldwide lung cancer incidence has been decreasing or leveling off among men, rising among women [4]. These give rise to an assumption that there is gender difference in association of tobacco smoking with lung cancer risk. Furthermore, in the end of 20th century, Prescott and colleagues [5] reported that women who smoked had a 50% greater coronary heart disease risk than their male counterparts, and then concluded that women might be more sensitive than men to some harmful effects of smoking. Huxley and Woodward [6] found that smoking women had a higher risk of coronary heart disease than smoking men (RRR: 1.25, 95%CI: 1.12, 1.39). However, the epidemiologic data about lung

* Corresponding author at: Department of Respiratory Medicine, Sir Run Run Shaw Hospital, Medical School of Zhejiang University, 3 East Qingchun Road, Hangzhou 310016, Zhejiang, China. Tel.: +86 571 86006339; fax: +86 571 86006339.

E-mail address: tougaoing2014@163.com (R. Zhang).

Table 1
Characteristics of included studies.

Study	Design (control type) ^a	Country	Participants (% male)	Mean age or age range (years)	Male current smoker (%)	Female current smoker (%)	Male former smoker (%)	Female former smoker (%)	Quality ^b
Akiba [21]	Cohort	Japan	61,505	NA	64.0	12.6	19.9	2.7	6
Becher [38]	Case–Control (PB+HB)	Germany	582 (75.3)	Cases: male: 38–83, female: 40–85	50.9	41.0	36.1	16.0	6
Blizzard [12]	Case–Control (PB)	Australia	530 (53.2)	33–55	37.6	31.9	36.5	27.4	8
Bracci [48]	Case–Control (PB)	USA	2374 (47.1)	Cases: 69.8	11.7	7.7	47.9	27.9	7
Chan [27]	Case–Control (HB)	China	790 (52.2)	NA	89.1	41.0	NA	NA	6
Chan-Yeung [28]	Case–Control (HB)	China	662 (64.0)	Cases: male: 57.5, female: 56.0 Controls: male: 57.4, female: 55.9	65.1	8.0	NA	NA	5
Darby [39]	Case–Control (PB)	England	2324 (65.6)	<75	34.4	35.6	52.6	29.6	6
De Matteis [4]	Case–Control (PB)	Italy	4059 (77.7)	35–79	38.2	32.5	48.3	25.0	8
Doll [40]	Case–Control (HB)	England	2930 (92.6)	25–74	97.5	54.2	NA	NA	4
Franco-Marina [56]	Case–Control (PB)	Mexico	1283 (63.2)	47–102	38.5	14.6	34.5	12.1	7
Gao [29]	Case–Control (PB)	China	2900 (51.5)	Cases: male: 35–64, female 35–69 Controls: 35–69	82.3	26.1	NA	NA	8
Harris [8]	Case–Control (HB)	USA	8582 (64.2)	<79	43.9	45.5	43.4	21.4	8
Hosseini [30]	Case–Control (HB)	Iran	726 (73.6)	Cases: 59.9 Hospital controls: 59.5; healthy controls: 59.2	63.3	41.7	9.7	9.4	5
Hu [31]	Case–Control (HB)	China	454 (70.9)	Male: 53.2; female: 50.6	66.5	35.5	NA	NA	6
Hu [32]	Case–Control (HB)	China	582 (74.7)	NA	61.8	23.8	NA	NA	6
Humble [49]	Case–Control (PB)	USA	1290 (65.5)	25–84	NA	NA	NA	NA	5
Hebert [11]	Case–Control (HB)	USA	4337 (58.4)	NA	62.8	46.6	NA	NA	7
Jedrychowski [41]	Case–Control (PB)	Poland	2172 (81.8)	Cases: male: 63.3, female: 65.3 Controls: male: 66.8, female: 76.1	81.8	37.1	NA	NA	5
Jockel [42]	Case–Control (PB+HB)	Germany	582 (76.0)	38–87	87.0	59.4	NA	NA	4
Jockel [43]	Case–Control (PB)	Germany	1939 (84.3)	33–80	90.5	50.5	NA	NA	8
Joly [58]	Case–Control (HB)	Cuba	2115 (70.5)	Cases: 23–89	84.6	46.3	NA	NA	4
Kreienbrock [44]	Case–Control (PB)	Germany	3746 (82.2)	Cases: male: 61, female: 58	85.2	50.2	NA	NA	7
Kreuzer [9]	Case–Control (PB+HB)	German, Italy	9792 (79.6)	<74	48.0	35.5	37.6	14.3	6
Lei [33]	Case–Control (HB)	China	1384 (70.0)	NA	83.1	44.2	NA	NA	4
Liu [23]	Case–Control (PB)	China	7112 (57.9)	NA	NA	NA	NA	NA	6
Lubi [50]	Case–Control (HB)	USA	23,008 (88.6)	Cases: male: 60.8, female: 60.7 Controls: male: 60.2, female: 60.6	86.4	42.1	NA	NA	5
MacLennan [34]	Case–Control (HB)	Singapore	533 (52.7)	NA	92.9	40.7	NA	NA	6
Minami [35]	Case–Control (HB)	Japan	2959 (82.6)	>40	52.7	11.8	26.6	3.0	6
Muscat [51]	Case–Control (HB)	USA	4745 (58.5)	NA	25.7	24.0	43.7	25.3	6
Mzileni [59]	Case–Control (HB)	South Africa	728 (64.7)	Cases: male: 58.6, female: 57.8 Controls: male: 60.9, female: 48.6	82.3	40.0	5.9	6.7	5
Nordlund [20]	Cohort	Sweden	41,710 (38.1)	18–69	14.9	16.2	8.5	3.4	8

Download English Version:

<https://daneshyari.com/en/article/2140898>

Download Persian Version:

<https://daneshyari.com/article/2140898>

[Daneshyari.com](https://daneshyari.com)