

## Review

## Alcohol consumption and lung cancer risk in never smokers

José Antonio García-Lavandeira<sup>a,b</sup>, Alberto Ruano-Ravina<sup>b,c,\*</sup>, Juan Miguel Barros-Dios<sup>b,c,d</sup><sup>a</sup> Service of Preventive Medicine, University Hospital Complex of A Coruña, Spain<sup>b</sup> Department of Preventive Medicine and Public Health, University of Santiago de Compostela (A Coruña), Spain<sup>c</sup> CIBER de Epidemiología y Salud Pública (CIBERESP), Spain<sup>d</sup> Service of Preventive Medicine, University Hospital Complex of Santiago de Compostela (A Coruña), Spain

## ARTICLE INFO

## Article history:

Received 26 January 2016

Accepted 31 March 2016

Available online 5 June 2016

## Keywords:

Ethanol

Lung neoplasms

Never smokers

Review

## ABSTRACT

**Objective:** The main objective of this study is to analyse the role of alcohol consumption on lung cancer risk in people who have never smoked.**Methods:** We conducted a systematic review of the scientific literature following the PRISMA statement. We searched Medline, EMBASE and CINAHL using different combinations of MeSH terms and free text. We included cohort studies, pooled cohort studies and case-control studies comprising at least 25 anatomopathologically-confirmed diagnoses of lung cancer cases, a sample size larger than 100 individuals and more than five years of follow-up for cohort studies. We excluded studies that did not specifically report results for never smokers. We developed a quality score to assess the quality of the included papers and we ultimately included 14 investigations with a heterogeneous design and methodology.**Results:** Results for alcohol consumption and lung cancer risk in never smokers are inconclusive; however, several studies showed a dose-response pattern for total alcohol consumption and for spirits. Heterogeneous results were found for wine and beer.**Conclusion:** No clear effect is observed for alcohol consumption. Due to the limited evidence, no conclusion can be drawn for beer or wine consumption. There is little research available on the effect of alcohol on lung cancer risk for people who have never smoked, and more studies are urgently needed on this topic.© 2016 SESPAS. Published by Elsevier España, S.L.U. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).**Consumo de alcohol y riesgo de cáncer de pulmón en personas nunca fumadoras**

## RESUMEN

**Objetivo:** El objetivo principal es analizar el papel que el consumo de alcohol desempeña en el riesgo de cáncer de pulmón en personas que nunca han fumado.**Métodos:** Se ha realizado una revisión sistemática de la literatura científica siguiendo la Declaración PRISMA. Se realizaron búsquedas en Medline, EMBASE y CINAHL utilizando diferentes combinaciones de términos MeSH y texto libre. Incluimos estudios de cohortes, cohortes agrupadas y estudios de casos y controles que cumplieren: mínimo de 25 casos de cáncer de pulmón confirmados por anatomía patológica, muestra total de al menos 100 individuos y más de 5 años de seguimiento en estudios de cohortes. Se excluyeron aquellos trabajos que no aportasen resultados individualizados para las personas no fumadoras. Se desarrolló una escala de calidad para valorar los trabajos incluidos. Finalmente, se incluyeron 14 investigaciones, con un diseño y una metodología heterogéneos.**Resultados:** Los resultados para el consumo de alcohol y el riesgo de cáncer de pulmón en personas nunca fumadoras no son concluyentes. Sin embargo, varios estudios muestran un patrón de dosis-respuesta para el consumo total y para el consumo de bebidas espirituosas. Los resultados obtenidos para vino y cerveza son heterogéneos.**Conclusión:** No se observa un efecto claro para el consumo de alcohol. Debido a la limitada evidencia, no puede obtenerse ninguna conclusión para el consumo de cerveza y vino. Hay pocas investigaciones disponibles sobre el efecto del alcohol en el riesgo de cáncer de pulmón en personas que nunca han fumado. Se necesitan, con urgencia, más estudios sobre este tema.© 2016 SESPAS. Publicado por Elsevier España, S.L.U. Este es un artículo Open Access bajo la CC BY-NC-ND licencia (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

## Palabras clave:

Etanol

Neoplasias pulmonares

Nunca fumadores

Revisión

**Introduction**Lung cancer is one of the most frequent cancers in the world. 1.8 million cases were estimated in 2012 (12.9% of total cancers).<sup>1</sup>

\* Corresponding author.

E-mail address: [alberto.ruano@usc.es](mailto:alberto.ruano@usc.es) (A. Ruano-Ravina).

```

("lung neoplasms"[MeSH Terms] OR ("lung"[All Fields] AND "neoplasms"[All Fields]) OR "lung
cancer"[All Fields] AND ("ethanol"[MeSH Terms] OR "ethanol"[All Fields])) OR ("lung
neoplasms"[MeSH Terms] OR ("lung"[All Fields] AND "neoplasms"[All Fields]) OR "lung cancer"[All
Fields] AND ("alcoholic beverages"[MeSH Terms] OR "alcoholic beverages"[All Fields])) OR ("lung
neoplasms"[MeSH Terms] OR ("lung"[All Fields] AND "neoplasms"[All Fields]) OR "lung cancer"[All
Fields] AND ("wine"[MeSH Terms] OR "wine"[All Fields])) OR ("lung neoplasms"[MeSH Terms] OR
("lung"[All Fields] AND "neoplasms"[All Fields]) OR "lung cancer"[All Fields] AND ("beer"[MeSH
Terms] OR "beer"[All Fields])) OR ("lung neoplasms"[MeSH Terms] OR ("lung"[All Fields] AND
"neoplasms"[All Fields]) OR "lung cancer"[All Fields] AND ("alcohol drinking"[MeSH Terms] OR
("alcohol"[All Fields] AND "drinking"[All Fields]) OR "alcohol drinking"[All Fields])) OR ("lung
neoplasms"[MeSH Terms] OR ("lung"[All Fields] AND "neoplasms"[All Fields]) OR "lung cancer"[All
Fields] AND "spirits"[All Fields]) OR ("lung neoplasms"[MeSH Terms] OR ("lung"[All Fields] AND
AND "neoplasms"[All Fields]) OR "lung cancer"[All Fields] AND "liquors"[All Fields]) OR ("lung
neoplasms"[MeSH Terms] OR ("lung"[All Fields] AND "neoplasms"[All Fields]) OR "lung cancer
"[All Fields] AND "hard liquors"[All Fields]) AND ("1990/01/01"[PDAT] : "3000/12/31"[PDAT])
AND "humans"[MeSH Terms] AND (English[lang] OR Spanish[lang])

```

**Figure 1.** Search strategy used in PubMed.

One in five cancer deaths is due to lung cancer, with 1.59 million estimated deaths in 2012. Lung cancer is the leading cause of cancer death among men worldwide.<sup>2</sup> Around 10–25% of lung cancer cases occur among individuals who have never smoked.<sup>3</sup> In fact, lung cancer in people who have never smoked has been proposed as an independent entity than that occurring in ever smokers.<sup>4–6</sup> Lung cancer in persons who have never smoked would be the seventh cause of cancer death worldwide<sup>7</sup> if ranked separately.

The epidemiology of lung cancer in people who have never smoked is not well known. Most part of the available literature refers to ever smokers. There are many risk factors for this specific disease, such as environmental tobacco smoke exposure,<sup>8</sup> residential radon,<sup>9</sup> occupation,<sup>10</sup> or previous respiratory diseases.<sup>11</sup> Regarding the effect of alcohol consumption and its types on lung cancer appearance, most studies have included mainly ever-smokers and the role of alcohol on the aetiology of lung cancer in patients who have never smoked is not clear. Some studies have observed that alcohol consumption might be a risk factor for lung cancer, with alcohol types (wine, beer, spirits) having a different effect on the onset of the disease.<sup>12</sup> Total alcohol consumption has been associated with lung cancer,<sup>13,14</sup> but red wine intake seems to be protective while the effect of beer is unclear.<sup>15,16</sup>

The role of tobacco in the aetiology of lung cancer cannot be disputed,<sup>17</sup> but the situation changes when we address the role of alcohol. Analyzing exclusively people who have never smoked would disentangle the specific role of alcohol consumption on lung cancer risk in this subgroup.

Due the lack of information on the association of alcohol consumption and lung cancer risk in people who have never smoked, our main objective is to address whether alcohol consumption, and its different types (beer, wine and spirits) has any effect on the risk of lung cancer through a systematic review of the scientific literature.

A better understanding of the topic reviewed would allow better promotion and health education policies.

## Methods

We developed a systematic review of the scientific literature following the 2009 PRISMA statement.<sup>18</sup>

### Literature search

We carried out a comprehensive literature search in MEDLINE, EMBASE and CINAHL databases, in order to obtain studies investigating the relationship between lung cancer in persons who have never smoked and alcohol consumption.

To retrieve information we used predefined search strategies. Particularly, to gather information in Pubmed database, we developed the strategy described in [Figure 1](#) employing different combinations of MeSH terms (lung neoplasms, ethanol, wine, beer, alcoholic beverages, alcohol drinking) and free terms (lung neoplasms, lung, neoplasms, lung cancer, ethanol, wine, beer, alcoholic beverages, alcohol drinking, spirits, liquors, hard liquors). We also included additional relevant studies found after manually reviewing the references of the identified publications.

Our search covered the period comprised from the first of January 1990 to the present, and it was constantly updated until 10/03/2016. We included papers published in English and Spanish and performed in humans. We decided to cover this period trying to get accessible and scientifically current search results.

When several publications were performed on the same study, we included the most recent.

### Inclusion and exclusion criteria

We used the following criteria to include papers in the systematic review: a) regarding the study design we included: meta-analysis, pooling studies, cohort studies and case-control studies; b) regarding the sample size we included only those studies with at least 25 lung cancer cases on persons who had never smoked. The overall sample size had to be higher than 100 individuals; c) regarding lung cancer diagnosis we included only studies where anatomopathological diagnosis was confirmed; d) regarding the follow-up period for cohort studies: it should be at least five years and; e) regarding smoking: studies that did not differentiate the results for smokers and for people who had never smoked were excluded.

To be included in the category of person who has never smoked, participants in the different studies should meet at least one of the following conditions: had smoked no more than 100 cigarettes

Download English Version:

<https://daneshyari.com/en/article/1073070>

Download Persian Version:

<https://daneshyari.com/article/1073070>

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