

AB015. Association between usage of cooking oils and risk of lung cancer among women: a hospital-based case control study in Singapore

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Background: Lung cancer is one of the most frequently diagnosed cancer and the leading cause of cancer deaths globally. It is also the third most frequently diagnosed cancer in Singaporean women. While previous studies have shown that cooking-related factors like cooking oil fumes are risk factors for lung cancer, they failed to take into consideration that cooking oils differ in properties like cooking fumes' mutagenicity, which have a direct impact on associated risk levels. Given that cooking is a universal activity, there is a need to examine the associations between different cooking oils and lung cancer risk, and the corresponding risk levels imposed on vulnerable populations like housewives due to their daily usage of these cooking oils.

Methods: A total of 399 lung cancer cases and 815 frequency-matched hospital controls from the Gene and Environment Life Study, a Singapore hospital-based case control study conducted from 2005 to 2008, were included in the analysis. Information on demographics, cooking oil use (corn, soybean, peanut, palm, blended vegetable, sunflower oil or lard), dietary and lifestyle factors were collected using questionnaires. Odds ratios (ORs) and

95% confidence intervals (CIs) were estimated using multivariable logistic regression, adjusting for potential confounders.

Results: Frequent lard users had higher odds of lung cancer (OR =3.42, 95% CI: 1.21–9.69) compared to blended vegetable oil users, particularly among never-smokers (OR =9.33, 95% CI: 1.13–76.75). In peanut oil users, ever-smokers had a higher odds of lung cancer (OR =7.52, 95% CI: 1.37–41.05) compared to blended vegetable oil users.

Conclusions: Cooking with lard and peanut oil are associated with lung cancer risk, though confirmation in prospective studies with bigger sample sizes is warranted.

Keywords: Lung cancer; cooking oil; Chinese women

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Footnote

Conflicts of Interest: The authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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