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Letter to the Editors concerning the paper “Ambient air pollution and lung cancer in Poland: research findings and gaps”

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The recent paper titled “Ambient air pollution and lung cancer in Poland: research findings and gaps” published by Mark Parascandola is an interesting recapitulation on available arguments that lung cancer could be related to ambient air pollution exposure, especially in the most polluted countries, including Poland [1].

Accepted methods of health-risk estimation indicate that the percentage of total deaths due to lung cancer attributable to ambient air pollution is lower (6%) compared to other diseases: 38% ischaemic heart disease, 18% chronic obstructive pulmonary disease (COPD), and 18% acute lower respiratory diseases [2]. Tobacco smoking remains the major determinant of lung cancer; however, we cannot omit the possible impact of other factors such as PM exposure. If ambient air pollution is really the most important factor in the shortening the life expectancy, then it may be expected that the worst situation is in the Silesia region (the most polluted region of Poland), while in fact the shortest life expectancy concerns inhabitants of the Łódź province (73.5 vs. 72.0 for males and 80.9 vs. 80.8 for females, respectively, in 2016). However, available data on total emission of particulate air pollutants suggest that 20 years ago (1996) aerosanitary conditions was four times worse in Silesia than in Łódź province (91,525 tons/year and 123,887 tons/year) [3]. Moreover, it is well known that socio-economic status is a serious determinant of inequalities in health and has significant impact on premature mortality [4]. Perhaps the impact of the socio-economic situation is more significant than the impact of air pollution regarding premature death, but a reasonable explanation requires future studies. I agree with Dr. Parascandola’s suggestion that the best way would be via a cohort study. The current opinion of epidemiologists suggests that chronic diseases (including lung cancer) are likely to result from the combination of environmental exposure to chemical and physical stressors and human genetics, and also are related with climatic, life-style, and socioeconomic characteristics [5].

On the other hand, I disagree that the lack of local studies makes it difficult to estimate the burden of air pollution exposure to cancer risk in Poland. The results of large cohort studies conducted in other European countries or in China and the United States are sufficient and conclusive (DALYs – Disability Adjusted Life Years). Moreover, my own experience in estimation of attributable burden in total and cardio-respiratory mortality (DALYs) in relation to an increase of PM_{2.5} concentration by 1 µg/m³ provides evidence of a similar health response in populations of neighbouring countries [6]. The environmental burden of disease (EBD) concept helps to recognise priority hazards and required actions in environmental health, so, despite some limitations, it might be worthwhile in public health.

DISCLOSURE

The author reports no conflict of interest

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