

Environmental Epidemiologic Study Regarding the New Chronic Cough Produced by Particulate Matters Including Polycyclic Aromatic Hydrocarbons

Principal Investigator: Hiroyuki NAKAMURA

Institution: Kanazawa University, Graduate School of Advanced Preventive Medical Sciences, Department of Environmental and Preventive Medicine, 13-1 Takaramachi, Kanazawa 920-8640, Japan

TEL, +81-76265-2215/ e-mail; hnakamu@staff.kanazawa-u.ac.jp

Cooperated by:

Kazuichi Hayakawa, Institute of Nature and Environmental Technology, Kanazawa University, Nomi city, Ishikawa 923-1224, Japan

Akinori Takami, Centre for Regional Environmental Research, National Institute for Environmental Studies, 16-2 Onogawa, Tsukuba, Ibaraki 305-8506, Japan

Hiroshi Odajima, Department of Pediatrics, National Hospital Organization Fukuoka National Hospital, 4-39-1 Yakatabaru, Minami-ku, Fukuoka 811-1394, Japan.

[Abstract]

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It is well known that respiratory diseases such as bronchial asthma have recently increased in East Asia, including Japan. The increases are considered to be partly due to particulate matters (PM) including polycyclic aromatic hydrocarbons (PAH) and Asian dust (AD). On the other hand, in addition to bronchial asthma, new chronic coughing diseases such as cough variant asthma and atopic cough have increased rapidly in recent years. Therefore, in this study, in order to clarify the relationship between PM components and new chronic cough diseases, we performed physical and chemical observations of PM components and epidemiological studies in 59 chronic coughing patients in Ishikawa Prefecture, and 39 patients with at Fukuoka National Hospital. Generalized estimation equations (GEE) analyzing the relationship between PAH concentration and cough frequency showed positive correlations of benz [a] anthracene (BaA) and pyrene (Pyr) with cough frequency. In Fukuoka, negative regression coefficient of IcdP / (IcdP + BghiP) suggested that PM was derived from coal burning in the China Ring Bohai economic zone and the Yangtze River Delta. resulted in the long-distance transportation from the continent. These results showed that PAH such as BaA and Pyr may be a risk factor for chronic coughing, and that environmental standards for PAH need to be newly set from the viewpoint of medical prevention against chronic cough. In addition, possible influences from the continent suggests the urgent necessities for establish preventive measures considering transportation routes.

[References]

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