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Perspectives: Smoking Regulation in Indoor Communal Spaces and COVID-19 Outbreaks

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ABSTRACT

Biomass smoke, including that from tobacco and incense sticks, exhibits disinfective activity against airborne and droplet-borne biocontamination. Tobacco smoke has been a silent epidemiological protector of indoor communal spaces. Uniform restrictions on smoking in indoor communal spaces is suspected to have contributed to COVID-19 outbreaks. The elimination of tobacco smoke from indoor communal spaces is like not adding hypochlorite to a public swimming pool. The uniform imposition of smoking restrictions in communal spaces carries a high epidemiological risk.

Keywords

Smoking regulation, Epidemiological risk, COVID-19 outbreak.

In Japan, increases in the prevalence of community-acquired pneumonia and parapneumonic empyema in nursing care facilities and nosocomial infections in hospitals, the rapid spread of SARS and MERS via airplanes, COVID-19 outbreaks on cruise ships, and the first wave of the COVID-19 pandemic all coincided with the introduction of smoking restrictions. Uniform restrictions on smoking in indoor communal spaces is suspected to have contributed to COVID-19 outbreaks [1]. The preservative and antimicrobial effects of biomass smoke have been known since antiquity [2]. Biomass smoke, including that from tobacco and incense sticks, exhibits disinfective activity against airborne and droplet-borne biocontamination [1] (Figure 1). The disinfective activity of tobacco smoke is comparable to that of electrolyzed saline, the best disinfectant that is currently used in clinical practice, including for SARS-CoV-2 antigens [3]. The levels of airborne contamination present in communal spaces in which smoking is allowed are comparable to those found in semi-clean rooms [1]. Tobacco smoke is a very effective decontaminator of the air in indoor communal spaces. Smoke particles from tobacco contain tar lipids, which are smaller than virus particles, charged with static electricity, and exhibit Brownian motion, and they effectively capture and kill microbes [1]. There is no practical alternative to tobacco smoke for cleansing airborne biocontamination of room air. The author does not ignore the adverse effects of biomass smoke, as living styles transitioned from biomass fuel to smokeless gas and electricity reduced the prevalence of tuberculosis and leprosy, human-specific diseases that have existed since prehistoric times. However, it is doubtful whether tobacco smoke exposure increases the risk of lung cancer [4], because over the last 40 years the reduction in the prevalence of smoking (from 80% to <20%) has been negatively corelated with the prevalence of lung cancer, which has progressively increased. Is tobacco smoke really a cause of lung cancer? Furthermore, passively inhaled smoke tar permanently accumulates in pulmonary macrophages in an amorphous state. In fact, smoke tar was not detected in early-stage lung cancer patients who were non-smokers and did not have an occupational dust inhalation history, and whose fathers and partners had been heavy smokers. The accumulated carbon particles found in these specimens were derived from vehicle tire dust, the only source of inhaled carbon particles in the current environment [5] (Figure 2A, B). The author believes that the main cause of the increase in the prevalence of lung cancer is global motorization, including in Japan, after World War II, rather than

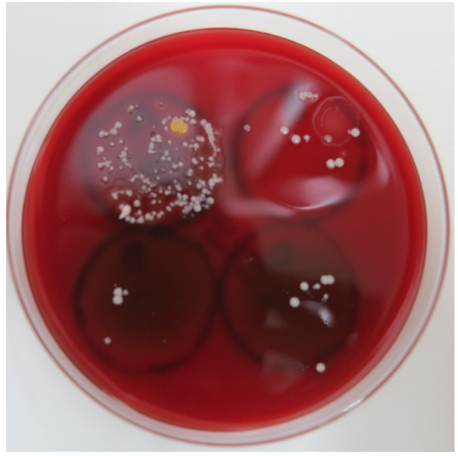

Figure 1: Bactericidal activity of biomass smoke.
Cultures of vocalized droplets from an elderly male volunteer produced hundreds of colony-forming units of bacteria. Biomass smoke from both cigarettes and incense sticks suppressed colony formation as well as electrolyzed saline (ES) mist; i.e., by 95–99% of the control value. Top left: control; Top right: exposed to a single spray of ES mist; Bottom left: exposed to cigarette smoke for 5 mins, Bottom right: exposed to smoke from 6 incense sticks for 5 mins.

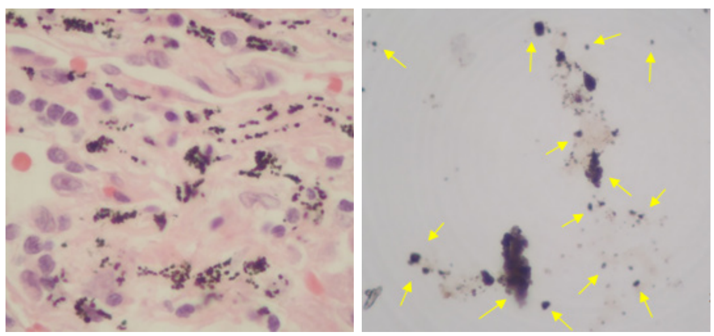

Figure 2: Anthracosis in a non-smoking housewife with bronchioloalveolar carcinoma.
The accumulation of amorphous cigarette tar was not detected, whereas the accumulation of carbon particles derived from tires was noted.
(A) Anthracosis in lung cancer; The carbon particles were of uniform size (1–2 µm) (hematoxylin-eosin staining; magnification: ×400). **(B)** Tire dust particles from the surfaces of vehicles; The particles ranged in size from 1–50 µm (raw smear; magnification: ×400). Yellow arrows: carbon particles derived from tire dust, consisting of free fine particles and sticky clusters of particles containing a brown tar-like substance.

tobacco, which has been smoked since Cristopher Columbus. The elimination of tobacco smoke from indoor communal spaces is like not adding hypochlorite to a public swimming pool. The uniform imposition of smoking restrictions in communal spaces carries a high epidemiological risk. The outcomes of the anti-smoking campaign run by the WHO should be verified.

Acknowledgement
Dr Nakamoto has been a disinfection specialist in the field of general thoracic surgery for over 45 years.

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