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EPIDEMIOLOGY • LETTER TO THE EDITORS

Obstructive sleep-disordered breathing and cancer: mechanism of association

Tomoyuki Kawada [1]

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Dear Editor,

I read with interest a paper by Staats et al. [1], who investigated the association between intermittent hypoxia, perforin, and granzyme B–positive peripheral blood lymphocytes. Although obstructive sleep apnea (OSA) was associated with a decrease in perforin-positive CD3+γδ-T cells, the reduction was only statistically significant in obese patients who had severe OSA. CD3+γδ-T cells were closely associated with tumor cell regulation, and this study supports the positive association between OSA and cancer incidence. I hereby add some epidemiological information with special reference to cancer subtypes.

First, Sillah et al. [2] reported the effect of sleep apnea on subsequent cancer incidence by calculating the age-sex standardized cancer incidence ratios (SIRs) (95% confidence intervals [CIs]) in patients with sleep apnea. The elevated cancer incidences were seen in case of melanomas and cancers of the kidneys, breasts, and corpus uteri. In contrast, the incident risks for lung and colorectal cancer were significantly low. They did not use body mass index (BMI) and diabetes status for the adjustment. In addition, cancer-specific proteins such as perforin-positive CD3+γδ-T cells would be useful to clarify the biological mechanism of the association.

Second, Kendzerska et al. [3] examined the association between the severity of OSA and prevalent and incident cancer. They employed age, sex, BMI, and smoking status as baselines for the adjustment. Adjusted hazard ratio (HR) (95% CI) of sleep time spent with oxygen saturation < 90%, per 10-min increase, for incident cancer was 1.00 (0.99–1.02). They examined the effect of OSA on specific types of cancer incidences, but there was no significant association. Palamaner Subash Shantha et al. [4] conducted a meta-analysis on the association between sleep-disordered breathing (SDB)/OSA and cancer incidence. Using five studies, adjusted relative risk (RR) (95% CI) of the SDB/OSA for cancer incidence was 1.40 (1.01–1.95), although there was a high inter-study heterogeneity. In addition, this study could not also specify the risk of specific types of cancer incidence based on OSA. Taken together, further epidemiological and laboratory studies are needed to verify the association between OSA and specific types of cancer incidence.

Compliance with ethical standards

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Conflict of interest The author declares that there is no conflict of interest.

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✉ Tomoyuki Kawada
kawada@nms.ac.jp

[1] Department of Hygiene and Public Health, Nippon Medical School, 1-1-5 Sendagi, Bunkyo-Ku, Tokyo 113-8602, Japan