Serum antioxidant levels and nutritional status in early and advanced stage lung cancer patients

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abstract

Objective: Malnutrition frequently occurs in lung cancer patients. We aimed to determine nutritional status and antioxidant and mineral levels in Thai patients with lung cancer.

Methods: A prospective study with matched case-control was conducted. Nutritional status was assessed by body mass index (BMI) and subjective global assessment (SGA). Eastern Cooperative Oncology Group (ECOG) performance status was used to assess the performance. The serum antioxidant and mineral levels were determined. Results: Forty-nine patients with a mean age of 58.8 (range, 35-82) who were first diagnosed with lung cancer were enrolled. They were compared with 60 healthy controls, and levels of retinol, a-tocopherol, b-carotene, lycopene, b-cryptoxanthin, selenium, and zinc were lower (P < 0.05). However, peroxidase activity was higher (P = 0.002) in patients. Selenium levels were higher in early stage compared to advanced stage patients (P = 0.041). Overweight patients had higher selenium levels (0.04 mg/L) than normal BMI patients (b = 0.04, P = 0.035). Patients with SGA class C had lower selenium levels (0.03 mg/L) than those with class A (b = 0.03, P = 0.035). The poorer ECOG performance patients had significantly lower b-carotene (b = 0.192, P = 0.003) and selenium (b = 0.031, P = 0.011) levels compared with those with good ECOG performance status. Conclusions: Significantly lower levels of antioxidants and selenium were found in lung cancer patients compared to healthy controls. Levels of some antioxidants and minerals differed among categories of BMI, SGA categories, or ECOG performance status. These findings may be helpful for further studies, such as the effect of nutritional supplementation on clinical outcomes.

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