

Does the selenium level affect overall survival in lung cancer?

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Purpose

Although the results of studies in populations with low selenium status indicate an inverse correlation between the selenium concentration in the body and the risk of the lung cancer, the effect of this microelement on survival rate with this disease has not been studied.

Material and Methods

We conducted a prospective study of 302 patients diagnosed with lung cancer in Szczecin, Poland. Serum selenium was measured at the time of diagnosis, prior to treatment. Patients were followed from the date of diagnosis until death or up to 80 months. Vital status was obtained by linkage to the Polish National Death Registry.

Results

In the Cox proportional hazards analysis performed for all individuals with lung cancer, the hazard ratio (HR) for death from all causes was 1.25 (95% CI 0.86 to 1.83, P=0.99) for patients in the lowest tertile of serum selenium, compared to those in the highest tertile. Among the patients with stage I of the lung cancer this relationship was significant (HR-2.73; P = 0.01) for selenium level in the lowest tertile (<57 µg/L) compared to tertile 3 (>69 µg/L, reference). The 80 months crude survival after diagnosis was 79.5% (95% CI: 68.5 – 92.4%) for individuals in the highest tertile and was 58.1% (95% CI: 45.1 - 74.9%) for individuals in the lowest tertile with stage I of lung cancer.

Conclusion

This study suggests that in patients undergoing treatment with stage I of lung cancer, serum selenium level (>69 µg/L) may be associated with improved survival.