

## ASSOCIATION BETWEEN PARAMETERS OF MINERAL BONE METABOLISM AND SURVIVAL IN PATIENTS UNDERGOING CHRONIC HEMODIALYSIS

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Beside the traditional risk factors which have an effect on cardiovascular diseases, hemodialysis patients are exposed to metabolic factors, such as malnutrition, micro-inflammation and oxidative stress, along with mineral bone disorder.

The aim of this study was to determine a three-year survival in patients undergoing chronic hemodialysis and to analyse correlation with parameters of mineral bone metabolism.

During the three-year follow-up 186 patients were included, of which 115 men (61.83%) and 71 women, with a mean age 61.47±12.42. The exact date and the direct cause of death were recorded and mineral bone metabolism parameters were analysed.

Out of 67 dead patients, 33 (49.25%) died from cardiovascular cause. Out of the total number of deaths in our study, only 11.9% of patients had a target PTH values. Patients with PTH>600 pg/ml are exposed to an increased risk from the overall mortality (RR=0.48, 95% CI (0.24-0.95), p=0.04), but also from cardiovascular mortality (RR=0.34, 95% CI (0.12-0.93), p=0.034) compared to patients with normal serum PTH. These patients have a statistically significant higher serum phosphorus in comparison with patients with normal PTH levels (1.72±0.42 vs. 1.39±0.36, p=0.032). Phosphorus above 2.10 mmol/L increases the relative risk for the overall mortality rate by 60% (RR=0.59, 95% CI (0.35-0.89), p=0.049). In our study, 2-fold higher risk of all-cause mortality (RR=2.00, 95% CI (0.92-4.36), p=0.048), and even 3-fold higher risk of cardiovascular mortality (RR=3.03, 95% CI (0.71-1.29), p=0.039) were found in patients with CaxP levels above 4.50 mmol<sup>2</sup>/L<sup>2</sup>.

Three-year mortality rate of patients undergoing hemodialysis was 36.02%, while half of the patients died from cardiovascular disease. Patients with hyperparathyroidism and elevated calcium phosphorus product are at the highest risk, both for all-cause and cardiovascular mortality. Patients with hyperphosphatemia are at higher risk for all-cause mortality. *Acta Medica Medianae 2015;54(4):37-45.*

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