Background: Chronic kidney disease (CKD) is associated with mineral and bone disorders (MBD). International guidelines suggest that levels of serum parathormone (PTH) or bone-specific alkaline phosphatase (b-ALP) can be used to evaluate MBD in dialysis patients. The evidence remains moderate and based on transversal studies.

Methods: We retrospectively investigated the variations of PTH (ΔPTH) and b-ALP (Δb-ALP) serum concentrations over a short (6-weeks) and a long (one-year) period in a monocentric hemodialysis population. The proportion of patients reaching the critical difference (CD) (50% for PTH and 25% for b-ALP) was calculated.

Results: Seventy-seven patients were included. A significant correlation between PTH and b-ALP levels was found at baseline (r=0.51). By contrast, no correlation was observed between ΔPTH and Δb-ALP over a 6-week interval (r=0.07). The CD for PTH and b-ALP was reached by 19 and 11 patients, respectively, with 2 patients showing consistent variations of both biomarkers. One year later, measurements were repeated in 48 survivors. No correlation was found between ΔPTH and Δb-ALP (r=0.27). The CD for PTH or b-ALP was reached by 24 patients and 28 patients, respectively, with 6 patients (12.5%) showing opposite results for both biomarkers.

Conclusion: This study shows the lack of correlation between ΔPTH and Δb-ALP over time in patients under chronic hemodialysis.