A review of the literature indicates that patients with glomerular diseases have not yet been systematically analyzed in terms of bone complications (including CKD-MBD and osteopenia/osteoporosis). In addition to all the classical risk factors for osteoporosis found in the general population and many risk factors specific for patients with chronic kidney disease, problems specific for patients with glomerular diseases are superimposed. One of the most significant is chronic treatment with glucocorticoids.

The aim of the study was to assess the calcium-phosphate homeostasis, the profile of proteins and hormones that play a regulatory role in this homeostasis, to evaluate bone mineral density using densitometry and to assess the risk of bone fractures using the FRAX calculator.

The study group consisted of 39 patients from the Regional Specialist Hospital in Olsztyn, Poland. The primary inclusion criterion was biopsy - confirmed primary glomerular disease and eGFR above 60 ml/min/1.73 m2. To determine the severity of mineral and bone disorders in the study population, a group of 20 hemodialysis (HD) patients and a control group of 21 healthy subjects were also included in the study.

Based on the analysis, it has been shown that early kidney damage with proteinuria in the course of glomerular disease modifies the profile of proteins that regulate bone metabolism, even in patients with well-preserved GFR. It was found that the severity of proteinuria modifies the concentration of FGF23, while it does not affect the concentrations of Klotho protein, fetuin A and sclerostin. The incidence of osteopenia and osteoporosis, as well as the risk of bone fractures based on the FRAX calculator, seem to be unaffected by glucocorticoid therapy (at least in the short term, i.e. maximum of 13 months).