Introduction. Colles fracture is the one of the most common fractures in postmenopausal women. It occurs at an earlier age than other osteoporotic fractures. Therefore Colles fracture is the first clinical manifestation of osteoporosis and the predictor of the subsequent more severe fractures.

Aim: The aim of this research is to define the bone mineral density different regions of the skeleton in postmenopausal women with Colles fracture.

Methods: Dual-energy X-ray absorptiometry (lumbar spine, femoral neck and total body) were performed to 71 postmenopausal women with Colles fracture – study group (average age of 58.5 ± 1.4 years) and to 89 healthy postmenopausal women without Colles fracture in a history of appropriate age and anthropometric data – control group (average age of 58.9 ± 1.4 years). Patients in both groups were divided into subgroups according to age: 30-39, 40-49, 50-59, 60-69 and 70-79 years.

Results: It was found that the incidence of osteoporosis in women with Colles' fractures in the accordance to BMD of lumbar spine and total hip was significantly higher compared to those in the control group and amounted to 68.5% and 41.6% in the study group and 32.6% and 2.25% in the controls. The BMD of patients in the study group was significantly lower in each age-specific subgroups, and in the whole study group than in control group. The BMD of lumbar spine was lower at 12.7% (1.14 ± 0.016 g/cm² versus 1.161 ± 0.017 g/cm², p <0.001), total hip - 15% (0.884 ± 0.015 g/cm² versus 1.063 ± 0.011 g/cm², p <0.001) and total skeleton - 9.4% (1.049 ± 0.009 g/cm² versus 1.158 ± 0.009 g/cm², p <0.001).

Conclusion: The BMD in women with Colles fracture was significantly lower at all surveys sites: lumbar spine, total hip and the total skeleton. The incidence of systemic osteoporosis in patients of the study group was significantly higher than in healthy women of the same age.