Systemic effects of hormones and growth factors play an important role in physiological and pathological mechanisms of bone remodeling. PTH - parathyroid hormone is currently being used to monitor treatment of osteoporosis. In vertebrates, homeostasis of calcium, phosphorus and magnesium is being assessed through a comprehensive endocrine system, which includes the interaction between PTH, calcitonin and vitamin D3. Parathyroid hormone regulates the transfer of minerals to the extracellular fluid and back, and that is by their effects on the intestine, kidney and bone. In this work postmenopausal women, which were divided into a control group (n=104) and the osteoporotic group (n=105) based on densitometric measurements we determined the levels of parathyroid hormone in the blood. Densitometric measurement was performed using the device of DXA Hologic Discovery W. through the femoral. The blood samples were centrifugated (R Selecta, Spain) and blood serum was separated, in which parathyroid hormone were determined by a fully automated analyzer Cobas e411 (Japan). The measured data were processed by the program Statistica ver. 10th. Lower average values of parathyroid hormone were measured in the control group (28.73±7.96 pg/ml) than in osteoporosis group (40.48±22.20 pg/ml). Based on Student’s T-test significant differences were found between the control and osteoporotic groups at a significant level p<0.01. Average levels of PTH in both groups were within the reference range (10-65 ng/l). Also, the average value of mineral elements calcium and phosphorus were within the reference range, so we found that there is no predispose for hyperparathyroidism or hypoparathyroidism in both groups. The work was supported by the Agency of Ministry of Education, science, research and sport of the Slovak Republic, the project ITMS: 26110230100.