

Background

The problem of osteoporosis is becoming increasingly important. It is connected with the widespread enlargement of life expectancy. Increasing the number of older people is accompanied by rise frequency of metabolic diseases, including osteoporosis first of all. The presence of type 2 diabetes and menopause significantly worsens the prognosis of patients.

The purpose of the study. the investigation of the impact of diabetes mellitus on phosphorus-calcium metabolism in postmenopausal women, depending on the type and length of diabetes, duration of menopause, weight and type of hypoglycemic therapy.

Material and methods

We examined the state of phosphorus-calcium metabolism in 86 women with diabetes type 1 (13 patients) and diabetes type 2 (73 patients). Exclusion criteria were the presence of severe somatic diseases affecting the phosphorus-calcium metabolism. Patients treated by oral hypoglycemic agents (metformin, sulfonylurea drugs) or combining insulin therapy (insulin and metformin). Calcium-phosphorus metabolism condition was evaluated by indicators of blood total calcium, ionized calcium, inorganic phosphorus and urinary calcium excretion per day.

Results

The results of the study of diabetes type impact on phosphorus-calcium metabolism revealed normal levels of serum ionized calcium in women in both groups (min 1.0 mM/L; max 1.29 mM/L with type 1 diabetes, min 1.02 mM/L; max 1.36 mM/L with type 2 diabetes). The concentration of inorganic phosphorus in serum of women with type 2 diabetes also did not go beyond the norm (min 0.93 mM/L; max 1.22 mM/L). The results of the study of influence of menopause duration on phosphorous-calcium metabolism indicators in women with type 2

diabetes showed that the differences of total and ionized calcium and inorganic phosphorus between the study groups were not likely. Their ion concentrations in blood serum were within the physiological level. The results of the study of phosphorous-calcium metabolism parameters in women with type 2 diabetes according to depending on the type of hypoglycemic therapy showed that patients in both groups had similar rates of excretion of calcium, serum total and ionized calcium and serum inorganic phosphorus.

Conclusions

It is shown that the concentration of ionized calcium, general calcium and inorganic phosphorus in the blood can not serve as the main marker of the state of bone mineral density in postmenopausal women with diabetes mellitus. It was found that sulfonylureas drugs and insulin in combination with biguanide not affect on performance of phosphorous-calcium metabolism in postmenopausal women with diabetes mellitus type 2.