

**Conclusions.** Received data might indicate the availability of mediated nephroprotective and cardioprotective effects of fenofibrate in addition to its direct effect on decreasing triglycerides and high density cholesterol.

### THE VALUE OF VITAMIN D IN PATIENTS WITH OSTEOARTHRITIS AND TYPE 2 DIABETES MELLITUS

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**Actuality.** At present, great importance is attached to the problem of comorbidity. There is a high incidence of combined pathology – osteoarthritis (OA) and type 2 diabetes mellitus (T2DM), especially in the older age group. At the same time, there are many studies that focus on the development of OA on the background of disorders of bone metabolism.

**Purpose.** To determine the level of vitamin D in patients with OA and with the combination of OA and T2DM and its effect on the course of OA.

**Materials and methods.** In total, 50 patients were examined at rheumatology and endocrinology departments in the Kharkiv Regional Clinical Hospital. All patients were divided into 2 groups. Group 1 - 20 patients with OA, group 2 - 20 patients with combined course of OA and T2DM. The mean age of the patients was  $56.08 \pm 0.71$ . The survey plan included anthropometric data, global knee pain [visual analog scale (VAS)], the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC), C-reactive protein (CRP). All patients with OA were made X-ray examination of knees. Determination of vitamin D level was done by ECLIA.

**Results.** We determined statistically significant association of the degree of functional insufficiency of the joints with increasing of complexity of diagnosis ( $p < 0.05$ ). Thus, the indices of WOMAC Pain score and WOMAC stiffness were similar in both groups, but the indices of WOMAC physical function subscore were significantly higher in patients with combined course of OA and T2DM ( $p < 0.05$ ). The level of vitamin D was statistically significant less patients with isolated OA ( $29.05 \pm 5.18$ ) compared to the group of patients with comorbid pathology ( $36.2 \pm 5.21$ ,  $p < 0.05$ ). We didn't find any statistically significant correlations between the level of vitamin D and radiological changes and the indices of WOMAC in patients with isolated OA. In 2<sup>nd</sup> group of patients we determined moderate statistically significant negative correlations between the level of vitamin D and WOMAC stiffness ( $r = -0.41$ ;  $p < 0.05$ ) and WOMAC physical function subscore ( $r = -0.51$ ;  $p < 0.05$ ). We level of CRP in 2<sup>nd</sup> group was higher ( $14,61 \pm 1,99$ ) compared to the group of patients ( $11,4 \pm 1,79$ ), but this difference wasn't significant. We determined moderate negative significant correlation between the level of CRP and the level of vitamin D in both groups of patients ( $r = -0.43$ ;  $p < 0.05$ ,  $r = -0.35$ ;  $p < 0.05$  respectively).

**Conclusions.** The study indicates that changes in bone metabolism are observed in groups of patient with OA and the combined course of OA and T2DM, in particular a significant decrease in vitamin D. A reliable association of vitamin D with the WOMAC index indicates a possible effect of bone metabolism disorders on the progression of OA in patients with comorbid pathology.

### EFFECT OF IL-1 $\beta$ AND RESISTIN ON DEVELOPMENT OF CARDIOMYOPATHY IN TYPE 2 DIABETES

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**Rationale.** Type 2 diabetes occurs when our body becomes resistant to insulin and pancreas produce more insulin to compensate and later pancreas becomes decompensated. Type 2 diabetes is major risk factor for cardiovascular disease.

**Purpose.** was to determine the effect of interleukin-1 $\beta$  (IL-1 $\beta$ ) and resistin to development of cardiomyopathy (CMP) in patients with diabetes mellitus (DM) type-2.

**Materials and methods.** Our work is part of study of the Department of Internal Medicine and Endocrinology № 3 Kharkiv National Medical University (Diabetes mellitus and co-morbid pathology). An analysis of the survey data was performed with 102 patients with type 2 diabetes with disease duration from 1 to 9 years. Depending on the degree of CMP, patients were divided into groups: group 1 (n = 38) - with moderate CMP expression, significant distribution factor was body mass index (BMI) of less than 28.5 kg/m<sup>2</sup>, group 2 (n = 64) - with severe CMP expression and BMI of more than 28.5 kg/m<sup>2</sup>. The control group consisted of 20 healthy individuals.

The levels of resistin and IL-1 $\beta$  in serum was determined by ELISA according to standard instructions. Statistical analysis of the results was carried out Statistica 7.0.

**Results.** The levels of IL-1 $\beta$  (pg/ml) in the blood serum of patients with DM type 2 of the 1st and 2nd groups ( $11,34 \pm 0,25$  and  $14,76 \pm 0,28$  respectively) were higher ( $p < 0,05$ ) compared to the control group ( $8,12 \pm 0,24$ ). Resistin levels in patients of the 2nd group ( $13,19 \pm 0,18$ , ng/ml) was significantly higher than in patients of the 1st group ( $10,51 \pm 0,25$ , ng/ml,  $p < 0,05$ ) and control group ( $10,06 \pm 0,35$ , ng/ml,  $p < 0,05$ ). significant correlations was found between the levels of IL-1 $\beta$  and resistin in patients of the group 1 ( $R = +0,589$ ,  $p = 0,00010$ ), and patients in group 2 ( $R = +0,450$ ,  $p = 0,00019$ ).

**Conclusions.** The levels of IL-1 $\beta$  and resistin were significantly higher in patients with severe cardiomyopathy. The presence of relationship between Resistin and IL-1 $\beta$  can demonstrate the interaction and influence on the formation of diabetic myocardial damage of these cytokines.

Thus in patients with type 2 diabetes with a BMI of more than 28.5 kg/m<sup>2</sup> and increased levels of pro-inflammatory IL-1 $\beta$  and resistin is an additional risk factor for the formation of diabetic CMP, which is a precursor to heart failure.