

**ABSTRACT****ANALYSIS OF *PROCOLLAGEN TYPE 1 AMINOTERMINAL PROPEPTIDE (P1NP)* LEVELS IN TYPE 2 DIABETES MELITUS PATIENTS ON LONG – TERM PIOGLITAZONE THERAPY  
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**Background** - Pioglitazone is a member of the thiazolidinedione group of drugs developed for the treatment of type 2 (non–insulin-dependent) diabetes mellitus, a disorder associated with a number of metabolic abnormalities that include impaired insulin secretion and insulin resistance. Post hoc analyses and meta-analyses of adverse event data from randomized controlled trials suggest that treatment with pioglitazone may further increase fracture risk in type 2 diabetes mellitus patients. Activation of PPAR- $\gamma$  and preferential stimulation of the differentiation of bone marrow mesenchymal stem cells into adipocytes at the expense of osteoblasts have been proposed as potential mechanisms for these effects of TZDs on bone.

**Objective** - The aim of this study was to analyze P1NP levels as markers of bone formation, in patients with type 2 diabetes mellitus with long-term pioglitazone therapy.

**Method** - This prospective observational study with cross sectional research design. Blood sampling was taken during the patient's regular visit to the Internal Medicine Outpatient Clinic in the period July - November 2018.

**Result** - 50 patients were participated in this study. 25 patients with non-pioglitazone therapy and 25 patients with pioglitazone therapy for more than 4 months. The mean P1NP level of the non pioglitazone group was  $24.02 \pm 7.99$  ng/ml, and the mean P1NP level of the pioglitazone group was  $20 \pm 6.83$  ng/ml. Statistical analysis showed no significant difference in serum P1NP levels between the two group ( $p = 0,062$ ).

**Conclusion** - There was no significant difference in P1NP levels in patients with long-term pioglitazone therapy and non-pioglitazone therapy.

**Keyword** : Pioglitazone, Type 2 Diabetes Mellitus, Risk Fracture, Procollagen Type 1 Aminoterminal Propeptide, P1NP.