Fatemeh Namvaran, J Clinic Toxicol 2013, 3:5
http://dx.doi.org/10.4172/2161-0495.S1.010

OMICS Group Conferences
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2nd International Summit on
Toxicology

October 07-09, 2013 Hampton Inn Tropicana, Las Vegas, NV, USA

Risk of osteoporosis after treatment with pioglitazone in diabetic patients: No relation to polymorphism of ADIPOQ (45T/G) and ADIPOR2 (795G/A)

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Adiponectin, an adipose-derived plasma protein, is reduced in patients with obesity and type 2 diabetes. Thiazolidinediones can increase adiponectin levels and improve insulin sensivity. There are controversy data in bone metabolism in patients with type 2 diabetes regarding the role of adipokines and thiazolidinedione effect on fracture risks. As pioglitazone has marked effect on bone metabolism, we aimed to study this effect on our diabetic population. The relation between adiponectin concentration and bone mass has been contrary as well. The object of this study is to determine the effect of pioglitazone on bone density and to investigate whether two single-nucleotide polymorphisms in the adiponectine gene (45T/G) and adiponectin receptor-2 gene (795G/A) affect the bone in Iranian patients with type 2 diabetes treated with pioglitazone.

We genotyped 128 non-diabetic participants and 101 patients with type 2 diabetes for 45T/G and 795G/A with polymerase chain reaction-restriction fragment length polymorphism assays. Patients were treated with pioglitazone for 12 weeks. We analyzed bone density markers osteocalcin and ICTP in patients before and after treatment with pioglitazone.

There were statistically-significant differences in osteocalcin and ICTP before and after pioglitazone therapy. However, we could not reach to significant association between adiponectin 45T/G and adiponectin receptor-2 795G/A polymorphisms and the risk of osteoporosis after pioglitazone treatment.

The adiponectin gene 45T/G and adiponectin receptor-2 795G/A mutations may not be an important determinant in bone density alternation in type 2 diabetes in the Iranian population.

Biography

Fatemeh Namvaran has completed her Ph.D. at the age of 30 years from Tehran University of Medical Sciences. She is working with Transplant Research Center, Shiraz University of Medical Sciences.

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