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Original Article

Relationship between genotype and serum levels of adipokines and bone mineral density in type 2 diabetes mellitus patients

Mirzaei k[1], Hossein-nezhad A [1]*, Hosseinzadeh-Attar M [2], Najmafshar A [1], Jafari N [1], Rahmani M[1], Larijani B [1]

1-Endocrinology and Metabolism Research Center, Tehran University of Medical Sciences, Tehran, Iran
2-Department of Nutrition and Biochemistry, Faculty of Public Health, Tehran University of Medical Sciences, Tehran, Iran

Corresponding Author:

Arash Hossein-nezhad
Endocrinology and Metabolism Research Center,5th Floor, Shariati Hospital, North Kargar Ave.,Tehran 14114, Iran, Tel: +98 (21) 88220037-8, Fax: +98 (21) 882220054, Email: emrc@sina.tums.ac.ir

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Abstract:

Background: There are conflicting data about bone density alterations in type 2 diabetic patients. Regarding the role of adipokines in glucose metabolism, they may have metabolic effects on bone mineral density (BMD) changes. The aim of this study was to determine the relationship between circulating visfatin, adiponectin and the visfatin genotype with BMD in type 2 diabetes (T2DM).

Methods: Thirty-two patients with T2DM participated in this cross-sectional study. Laboratory measurements were included FBS, HbA1C, lipid Profile, fasting serum visfatin and adiponectin. Hip and spine BMD were measured using DEXA. Genotyping for visfatin gene SNP (rs2110385) was performed by using the PCR- RFLP method.

Results: Genotype distributions of GG, GT and TT were 37.5%, 43.8% and 18.8%, respectively. Prevalence of osteoporosis in patients with GG genotype was 33.3%; whereas, not observed in other two genotypes. Hip BMD and Z-score were significantly lower in GG genotype. We found significant correlation between circulating visfatin and hip BMD (r=-0.31). Circulating adiponectin and visfatin levels had significant correlation with hip BMD independent of BMI and age.

Conclusion: Our results suggest that adipokines may contribute to BMD changes in type 2 diabetes mellitus patients. Genotype variations may explain inconsistent BMD changes among these patients.

Keywords:

Bone mineral density , Aipokines , Visfatin , Genotype , Adiponectin

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