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Original Article

The Influence of Adipokines on Fetal Bone Turnover

A Moradi Zirkohi, Zh Maghbooli, A Hossein-nezhad, F Zare, F Bandarian, H Saghafi, *B Larijani

Endocrinology and Metabolism Research Center of Tehran University of Medical Sciences, Iran

Corresponding Author:

B Larijani

Tel: +98 21 84902476, Fax: +98 21 88220037, E-mail: emrc@sina.tums.ac.ir

Abstract:

Background: A relation between adiponectin and bone homeostasis has been illustrated through studying adiponectin secretion and its receptor presentation in bone forming cells. The aim of our study was to investigate the relationship between fetal bone turnover and adipokines.

Methods: In a cross-sectional study performed in Tehran University of medical sciences related hospitals, 77 samples (39 males, 38 females) of umbilical cord blood immediately after delivery were gathered. Clinical characteristics such as gender, weight, length, weight to length ratio were recorded. Measurements of leptin, adiponectin, osteocalcin and crosslaps were done by ELISA methods in biochemistry and hormone laboratory of endocrinology and metabolism research center. The amounts of crosslaps and osteocalcin were expressed as *t*-scores, and then *t*-scores of crosslaps was subtracted from osteocalcin *t*-scores to establish estimation for bone formation, which we named Bone Formation Index.

Results: In Univariate Analysis, after entrance sex, birth weight and birth length as fixed factors, leptin and adiponectin displayed an independent effect on Bone Formation Index.

Conclusion: Our data suggest that both leptin and adiponectin have a remarkable impact on bone turnover in fetus.

Keywords:

Leptin . *Adiponectin* . *Osteocalcin* . *Crosslaps* . *Umbilical cord* . *Bone Turnover*

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