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Acta Medica Iranica

2009;47(4) : 75-79

Relationship between Serum Umbilical Cord and Maternal Leptin and Adiponectin Concentrations with Fetal Growth Parameters

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Abstract:

Background: Pregnancy and accelerated fetal growth always are related with major metabolic changes and body fat redistribution and adiponectin is one of principle adipocyte hormones, so studying adiponectin changes during pregnancy may reveal some hidden parts of fetal metabolism. The aim of this study was to assess adiponectin and leptin levels in umbilical cord and maternal serum, their relation with each other and with neonatal weight, birth length and other fetal growth markers. Methods: The study was carried out with 72 appropriate for age newborns (36 female, 36 male) and their mothers. The anthropometric variables of the newborns studied were birth weight, birth length, and birth weight/birth length and ponderal index. Maternal and umbilical cord adiponectin and leptin levels were measured by ELISA and compared. Results: The median of cord blood adiponectin concentration were 3 fold higher than those of maternal group. Umbilical cord blood leptin levels were significantly correlated with neonatal birth weight and birth weight/ birth length ($r = 0.29, P = 0.01$ and $r = 0.24, P = 0.04$, respectively). No statistical difference has been demonstrated between both groups of male and female neonates regarding birth weight, birth length, maternal and neonatal leptin levels, ponderal index and maternal and neonatal adiponectin levels. Conclusion: Neonatal leptin is related to birth weight. Adiponectin has no relation with birth weight. Neither leptin nor adiponectin correlated with gender difference.

Keywords:

[Serum umbilical](#) . [Maternal leptin](#) . [Fetal growth](#)

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