

Adiponectin and Resistin Levels in Umbilical Serum of Term Neonates and Relation to Birth Weight

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6UW_[fci bX: Optimal birth weight is an important factor for the future health of the newborns. Aberrations in fetal growth are associated with adverse health effects both in early life and in late childhood and adulthood. Fetal growth is controlled by both maternal hormones and nutrition. Adipokines, including resistin and adiponectin are known regulators of energy metabolism; although their role in the regulation of fetal growth still poorly understood.

CV'YWh]jY: The aim of the present study was to evaluate the relationship between adiponectin and resistin with abnormalities of neonatal birth weight and to identify the correlation between these proteins and various maternal and neonatal factors.

DUh]Ybhg'UbX'AYh\cXg: Comparative controlled study included 120 full term newborns recruited from Al-Azhar University Hospital (New Damietta), during the period from January 2016 to February 2017. Included newborns were divided into 3 groups; group 1) 40 small for gestational age (SGA) newborns, 2) 40 large for gestational age (LGA) newborns, and group 3) 40 apparently healthy appropriate for gestational age (AGA) newborns, were selected randomly. Serum umbilical cord adiponectin and resistin were measured by ELISA.

FYgi`hg: There was no significant difference between groups as regard to maternal age (P: 0.797), parity (P: 0.77), gestational age (P: 0.528) and BMI (P: 0.091). Umbilical cord resistin and adiponectin were significantly lower among LGA group (resistin: 16.9 ± 1.92 ng/ml; adiponectin: 6.74 ± 2.23 g/ml), and significantly elevated among SGA group (resistin: 23.03 ± 3.97 ng/ml; adiponectin: 14.92 ± 3.19 g/ml) than AGA group (resistin: 17.98 ± 1.89 ng/ml; adiponectin: 11.04 ± 1.91 g/ml; P<0.001 for all). Finally, there was significant negative correlation between both resistin and adiponectin with birth weight, length and head circumference.

7cbW'ig]cb: Adiponectin and resistin might have an important role in controlling fetal growth and may be related to the occurrence of fetal macrosomia and intrauterine growth restriction.

?YmkcfXg. Resistin; Adiponectin; Cord blood; Neonates; Small for gestational age; Insulin; Birth weight; Fetal macrosomia

Introduction

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the range from normal to pathological [18], indicating a role in regulating placental transport and growth of the fetus in relation to maternal nutrient status [19].

Mode of delivery	NVD	16 (40%)	17 (42.5%)	12 (30%)	0.47	0.24	0.82
	CS	24 (60%)	23 (57.5%)	28 (70%)			
Birth weight (grams)		2045 ± 239	3118 ± 364	3673 ± 153	<0.001	<0.001	<0.001
Length		44.28 ± 1.83	48.59 ± 2.04	50.49 ± 1.32	<0.001	<0.001	<0.001
Head circumference		30.98 ± 0.92	33.38 ± 1.08	34.56 ± 0.77	<0.001	<0.001	<0.001

Table 1: Characteristics of mothers and neonates in studied groups

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Umbilical serum adiponectin and resistin levels in studied groups

Umbilical serum adiponectin levels were significantly lower among LGA newborns than AGA newborns (6.74 ± 2.23 versus 11.04 ± 1.91)

growth which may result in the occurrence of fetal macrosomia and intrauterine growth restriction.

Conclusion

Our findings pointed to the potential role of adiponectin and resistin in regulation of fetal growth, probably through their effects on supply of nutrients to the placenta and mediated by insulin receptors. These results might help understanding the pathophysiology of fetal growth aberrations; thus, better insights to the control of various complications that associated with these disorders, either early-onset complications as hypoglycemia and other metabolic disturbances or late-onset complications including cardiovascular, metabolic and endocrine abnormalities.

Conflict of Interest

None declared

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