



Breastfeeding effects on Visfatin levels in postpartum women

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Objective

To investigate the effect of breastfeeding on the change of Visfatin levels in postpartum women.

Methods

Twenty-nine postpartum women were enrolled in the study. All measurements were completed at the 2nd and 16th week postpartum. Women who had been continuously breastfeeding (10 women), those who had never breastfed (9 women) and those who had breastfed for a short period of time but then ceased (10 patients) were enrolled into the study. Serum levels of insulin, glucose, cholesterol, triglycerides, and Visfatin were measured.

Results

In the continuously breastfeeding group, the women at the 16-week point had higher levels of Visfatin (14.5 ± 4.1 , 17.0 ± 5.1 ng/mL; $p = 0.001$). In the never breastfed group, the women at the 16-week point had higher levels of Visfatin (22.6 ± 3.9 , 19.1 ± 3.0 ng/mL; $p = 0.005$). The Visfatin levels in the breastfed but ceased group were found to not be significantly different between the two test points (13.3 ± 2.5 , 13.4 ± 2.5 ng/mL; $p = 0.815$). Regarding the association between serum Visfatin and markers of lipid metabolism, significant correlations were found between Visfatin and hemoglobin A1c ($r = -0.425$, $p = 0.022$) at the 2-week point and triglycerides ($r = -0.387$, $p = 0.038$) at the 16th week.

Conclusion

Continuous breastfeeding for at least 16 weeks could induce increased Visfatin levels. The findings of our study might shed light on the necessity of further exploration of the mechanisms through which lactation may influence the occurrence of diabetes.

Table 1
Clinical data of the "feeding" group.

	Feeding		
	2 nd wk (n = 10)	16 th wk (n = 10)	p
Age (y)	32.8 ± 3.9		
Body weight (kg)	60.2 ± 7.2	58.3 ± 6.1	0.005**
BMI (kg/m ²)	24.1 ± 2.5	23.4 ± 2.1	0.005**
AST (IU/L)	19.6 ± 5.5	19.3 ± 4.7	0.790
ALT (IU/L)	25.1 ± 12.7	21.7 ± 7.4	0.281
BUN (mg/dL)	15.0 ± 3.4	12.8 ± 3.3	0.041*
Creatinine (mg/dL)	0.6 ± 0.1	0.6 ± 0.1	0.103
Insulin (μIU/mL)	3.5 ± 2.9	3.1 ± 1.4	0.721
Glucose (AC) (mg/dL)	88.0 ± 14.5	91.6 ± 5.1	0.434
Cholesterol (mg/dL)	235.6 ± 50.8	198.7 ± 28.8	0.044*
Triglycerides (mg/dL)	94.9 ± 35.1	63.2 ± 37.3	0.043*
Hemoglobin A1c (%)	5.4 ± 0.3	5.4 ± 0.3	0.591
Visfatin (ng/mL)	14.5 ± 4.1	17.0 ± 5.1	0.001**

Values are expressed as mean ± standard deviation. "Feeding" refers to women who had been continuously breastfeeding.

* $p < 0.05$, ** $p < 0.01$.

ALT = alanine aminotransferase; AST = aspartate aminotransferase; BMI = body mass index; BUN = blood urea nitrogen.

Table 2
Clinical data of the "stopped feeding" group.

	Stopped feeding		
	2 nd wk (n = 10)	16 th wk (n = 10)	p
Age (y)	30.4 ± 4.2		
Body weight (kg)	58.1 ± 8.1	56.2 ± 8.4	0.027*
BMI (kg/m ²)	23.0 ± 1.8	22.2 ± 2.0	0.026*
AST (IU/L)	20.5 ± 3.6	20.2 ± 3.7	0.790
ALT (IU/L)	24.6 ± 6.9	21.1 ± 5.4	0.144
BUN (mg/dL)	12.9 ± 3.7	10.3 ± 2.8	0.085
Creatinine (mg/dL)	0.6 ± 0.1	0.6 ± 0.1	0.514
Insulin (μIU/mL)	3.2 ± 1.6	3.8 ± 2.0	0.335
Glucose (AC) (mg/dL)	91.0 ± 13.9	92.4 ± 9.7	0.535
Cholesterol (mg/dL)	231.8 ± 34.5	180.5 ± 26.6	<0.001**
Triglycerides (mg/dL)	89.4 ± 67.3	81.0 ± 62.6	0.191
Hemoglobin A1c (%)	5.1 ± 0.5	5.2 ± 0.4	0.460
Visfatin (ng/mL)	13.3 ± 2.5	13.4 ± 2.5	0.815

Values are expressed as mean ± standard deviation. "Stopped feeding" refers to those who breastfed for a short period of time but then ceased.

* $p < 0.05$, ** $p < 0.01$.

ALT = alanine aminotransferase; AST = aspartate aminotransferase; BMI = body mass index; BUN = blood urea nitrogen.

Table 3
Clinical data of the "no feeding" group.

	No feeding		P
	2 nd wk (n = 9)	16 th wk (n = 9)	
Age (y)	31.2 ± 3.3		
Body weight (kg)	60.5 ± 6.8	56.3 ± 5.6	0.012*
BMI (kg/m ²)	23.8 ± 2.8	22.2 ± 2.5	0.012*
AST (IU/L)	19.2 ± 2.1	18.7 ± 3.3	0.594
ALT (IU/L)	20.6 ± 7.3	16.3 ± 4.3	0.111
BUN (mg/dL)	14.5 ± 3.3	11.3 ± 1.9	0.004**
Creatinine (mg/dL)	0.6 ± 0.1	0.6 ± 0.1	0.377
Insulin (μIU/mL)	2.7 ± 1.2	3.3 ± 1.0	0.107
Glucose (AC) (mg/dL)	89.7 ± 5.3	91.2 ± 3.9	0.607
Cholesterol (mg/dL)	238.3 ± 51.9	188.0 ± 31.1	0.015*
Triglycerides (mg/dL)	83.2 ± 46.8	76.0 ± 33.3	0.622
Hemoglobin A1c (%)	5.1 ± 0.3	5.2 ± 0.3	0.347
Visfatin (ng/mL)	22.6 ± 3.9	19.1 ± 3.0	0.005**

Values are expressed as mean ± standard deviation. "No feeding" refers to those who had never breastfed.

p* < 0.05, *p* < 0.01.

ALT = alanine aminotransferase; AST = aspartate aminotransferase; BMI = body mass index; BUN = blood urea nitrogen.

Table 4
Correlations between serum visfatin concentrations and various parameters.

	Visfatin (2 nd wk)		Visfatin (16 th wk)	
	r	p	r	p
Age	-0.231	0.228	-0.156	0.420
Body weight	0.261	0.171	0.090	0.644
BMI	0.212	0.269	0.096	0.620
Insulin	-0.100	0.605	-0.218	0.255
Glucose (AC)	-0.223	0.244	-0.257	0.179
Hemoglobin A1c	-0.425	0.022*	-0.224	0.242
AST	-0.092	0.636	-0.255	0.182
ALT	-0.105	0.588	-0.272	0.154
BUN	0.255	0.182	0.174	0.365
Creatinine	0.005	0.980	0.195	0.312
Cholesterol	-0.127	0.511	0.026	0.893
Triglycerides	-0.226	0.238	-0.387	0.038*

**p* < 0.05.

ALT = alanine aminotransferase; AST = aspartate aminotransferase; BMI = body mass index; BUN = blood urea nitrogen.