International Archives of Medical Research
Volume 9, No. 2, pp.25-29 2017

ORIGINAL

Comparison of Plasma Visphatin and Eotaxin Levels Before and After Training of Women and Man Sports in the Dicle University Handball Team

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Abstract

In our study, we aimed to compare with today's significant metabolic disease that leads to adipose tissue visfatin secreted from the handball sport in which men and women in training before and after taking the blood pressure measurement laboratory findings. For this purpose, Dicle University Faculty of Physical Education and reading the sports section and 12 female, 8 male athlete of the 2-week comparison of plasma visfatin level handball match before and after the scheme was taken blood samples and samples with the school's handball team athletes were kept in the study terminated until the physiology laboratory. Plasma visfatin value of athletes only meaningful in a way predicted by eotaxin. The value of eotaxin-owned neck circumference and pre-training of the subjects in a meaningful way by the plasma visfatin yordanırk, the value of owned eotaxin after a workout with a single predictor of plasma visfatin belongs.

Keywords: Plasma visfatin, eotaxin, handball

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Introduction

"Visfatin is a new generation of adipokines that have been shown to be associated with obesity and insulinimetric efficacy has been assessed in terms of the effect of exercise on plasmavitamin and eotaxin in relation to the cardiovascular risk factor" (1).

Rapidly conducted studies on the physiological role of Visfatin are likely and promising to bring about new implications for the treatment of metabolic diseases such as glucose homeostasis and / or diabetes "(2).

In our study, visfatin secreted from adipose tissue, which causes important metabolic diseases of today, was aimed to compare the blood measurements before and after the training to the laboratory findings in the male and female sportsmen performing handball.

Material Methods

Biochemical measurements of all participants were performed at the Central Laboratory of Dicle University. Venous blood samples taken before and after training for at least 8-12 hours after training were centrifuged at 4000 rpm for 10 minutes to separate serum samples. Visfatin and eotaxin levels were measured by ELISA (Enzyme-Linked Immunosorbent Assay) method using commercial kits in serum samples stored at -80 ° C.

Serum visfatin levels were measured by sandwich ELISA immunoassay using the "SunRed Human Visfatin ELISA" kit.

Reagents kept at 2-8 º C before analysis were allowed to stand in room heat for 30 minutes before starting to work. The 30-fold concentrated washing solution was diluted with 600 ml distilled water. The visfatin standard was diluted before use to prepare standards at concentrations of 6.4ng / ml, 3.2ng / ml, 1.6ng / ml, 0.8ng / ml and 0.4ng / ml.

Statistical analysis:

In the analysis of the data, the Mann-Whitney U test was used for nonparametric tests to compare the mean of control and groups. Regression analysis was used to examine the relationship between visfatin and eotaxin values and body fat percentage and body mass index. Statistical analyzes, graphs and histograms were performed in a computer environment loaded with the current SPSS program. The results were expressed as mean ± standard deviation, and p values obtained from the comparisons were considered significant if they were smaller than 5% ($p < 0.05$) and insignificant if they were greater than 5%.

Results

Table 1. Evaluation of visfatin measurements before and after training according to Gender

			Gender		
			Woman (n=12)	**Man (n=8)**	
					[c]***p***
Visfatin	**Before training**	*Min-Max (Medyan)*	4,5-10,2 (5,7)	4,8-11,1 (8,4)	***0,122***
		Ort±Ss	6,88±2,16	8,24±2,87	
	After training	*Min-Max (Medyan)*	2,2-10,1 (2,9)	2,8-10,1 (5,5)	***0,044****
		Ort±Ss	4,26±2,74	6,33±2,59	
		[b]***p***	***0,008***	***0,012****	
	Differences Before and After training	*Min-Max (Medyan)*	-6,3-1,4 (-2,35)	-6,7--0,3 (-1,35)	***0,487***
		Ort±Ss	-2,63±2,55	-1,91±2,10	

[b]*Wilcoxon Signed Ranks Test* [c]*Mann Whitney U Test* **p<0,05* ***p<0,01*

There was no statistically significant difference between pre-training Visfatin measurements and gender of the cases (p = 0.122, p> 0.05). The statistical significance of Visfatin measurements after menstruation was found to be higher in women than in women (p = 0.044, p <0.05). The mean decrease of 2.63 ± 2.55 in the Visfatin measurements after training was statistically significant (p = 0.008; p <0.01). The mean 1.91 ± 2.10 decrease in Visfatin measurements after training was statistically significant (p = 0.012; p <0.05).

Table 2. Evaluation of eotaxin measurements before and after training by Gender

			Gender		
			Woman (n=12)	**Man (n=8)**	
					[c]***p***
Eotaxin	**Before training**	*Min-Max (Medyan)*	41,5-85,2 (65,8)	54-95,8 (88,1)	***0,025****
		Ort±Ss	62,54±14,52	81,26±17,85	
	After training	*Min-Max (Medyan)*	39,8-86,2 (49,1)	35-96,1 (67,6)	***0,231***
		Ort±Ss	56,03±17,70	67,59±23,82	
		[b]***p***	***0,077***	***0,237***	
	Differences Before and After training	*Min-Max (Medyan)*	-26-3,9 (-4,5)	-60,8-3 (-0,5)	***0,700***
		Ort±Ss	-6,51±9,46	-13,68±23,98	

[b]*Wilcoxon Signed Ranks Test* [c]*Mann Whitney U Test* **p<0,05*

The pre-training Eotaxin levels of males were higher than females (p = 0.025, p <0.05).

Table 3. Evaluation of body mass index measurements before and after training according to Gender

			Gender		
			Woman (n=12)	**Man (n=8)**	
					[c]p
BMI (kg/m²)	**Before training**	*Min-Max (Medyan)*	17,1-23,6 (19,6)	18,9-24,8 (22,1)	***0,005*****
		Ort±Ss	19,72±1,57	22,39±2,11	
	After training	*Min-Max (Medyan)*	17,1-23,2 (19,6)	18,9-24,2 (21,7)	***0,005*****
		Ort±Ss	19,62±1,45	22,02±1,90	
		[b]p	***0,180***	***0,028****	
	Differences Before and After training	*Min-Max (Medyan)*	-0,76-0 (0)	-0,71-0 (-0,34)	***0,029****
		Ort±Ss	-0,10±0,24	-0,37±0,28	

[b]Wilcoxon Signed Ranks Test *[c]Mann Whitney U Test* ***p<0,01* **p<0,05*

Pre-training BMI measurements of males were found to be higher than females statistically significant (p = 0.005; p <0.01). The posttraumatic BMI measurements of males higher than females were statistically significant (p = 0.005; p <0.01).

There was no statistically significant change in BMI measurements after training (p = 0.180; p> 0.05). The mean decrease in mean BMI of 0.37 ± 0.28 kg / m2 after training was statistically significant (p = 0.028; p <0.05).

It was found statistically significant that the change in post-training BMI measurements before and after training was statistically significant (p = 0.029; p <0.05).

Table 4. Evaluation of body fat ratio measurements before and after training according to Gender

			Gender		
			Woman (n=12)	**Man (n=8)**	
					[c]p
Bodyfat percentage (%)	**Before training**	*Min-MaX (Medyan)*	21-33 (24,5)	19-29 (21)	***0,024****
		mean±*Ss*	26,00±3,84	22,13±3,48	
	After training	*Min-Max (Medyan)*	19-33 (24)	19-29 (19)	***0,045****
		mean±*Ss*	25,00±4,26	21,38±3,78	
		[b]p	***0,109***	***0,059***	
	Differences Before and After training	*Min-Max (Medyan)*	-9-0 (0)	-3-0 (-0,5)	***0,387***
		mean±*Ss*	-1,00±2,59	-0,75±1,04	

[b]Wilcoxon Signed Ranks Test *[c]Mann Whitney U Test* **p<0,05*

Women's pre-training body fat ratio measurements were statistically significant (p = 0.024, p <0.05). Post-training body fat ratio measurements of women were higher than men (p = 0.045, p <0.05).

Discussion

The biological parametric values of male and female athletes of the handball team of Dicle University were found to be 7,43 ((+) 2,49 ng / ml before the mean training of plasma visfatin. After training, this value decreased to 5.09 ((+) 2.81 ng / ml. This decrease in plasma visfatin value is statistically significant. This finding that we obtained in the research is in line with the literature.

Choi et al. (3) investigated the anthropometric measurements and the change in serum visfatin level. Forty-eight women between the ages of 30 and 55 participated in the study. Subjects were given aerobic exercise for 5 days 45 minutes a week and for 12 weeks until the average heart rate reached 60-75%. A significant decrease in plasma visfatin levels was observed after the exercise program.

Another echinotrophic parameter, eotaxin, was also found to decrease after training similar to plasma visfatin. The mean eotaxin level of the athletes before training was 70,03 ((+) 18,11 pg / ml, while 60,66 ((+) 20,60 pg / ml after training. This significant decrease in eotaxin is parallel to the literature. Previously, Choi et al. (1) showed a significant decrease in eotax at the end of the 12-week exercise program.

Exhaustion-related reductions in plasma visfatin and eotaxin levels suggest that beneficial effects of exercise on human health may be indicative. Thus; There is evidence that visfatin and eotaxin levels are elevated in many metabolic and immunological diseases (1, 4, 5, 6, 7).

Conclusions and Suggestions

As a result, according to the results obtained from this study; physical activity, body fat ratio, or body mass index. However, it decreases the plasma visfatin and eotaxin levels from the biological properties of the subjects. If the triggering effects of adipokines are considered in some metabolic and immunological diseases, changes in the plasma visfatin and eotaxin levels of exercise may be determinants of the positive effects of exercise or sport on health.

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