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The Association of Acromegaly and Visfatin

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Abstract

Introduction: Acromegaly is a systemic disease that causes multiple metabolic disorders caused by an excess of growth hormone. The excess of growth hormone affects the secretion of adipokines in fat tissue, leading to metabolic disorders. Visfatin is also an adipokine synthesized in visceral fat tissue,and plays a role in systemic inflammation. In this study, we evaluated the effect of acromegaly on serum visfatin levels and the parameters that may be associated with it.

Method: 53 acromegaly patients (37 females/16 males) in acromaegaly gruop and 34 patient (22 females/12 males) in the control group with normal IGF1 and BH with similar age and body mass index (BMI) were included in our study. The waist and hip circumference, fasting blood glucose, insulin, HbA1c, lipid profile, BH, IGF1 and visfatin levels were compared among the groups. Epicardial fat tissue was examined by echocardiography. Serum visfatin levels were measured by micro ELISA. Correlation analysis was performed.

Result: The visfatin levels in the acromegaly group were significantly higher than the control group (p<0.001).In addition, HbA1c values were higher in the acromegaly group (p=0.007), while other parameters were similar between the groups (Table 1). In the correlation analysis of all groups, there was a significant positive correlation between visfatin levels and HbA1c, IGF1 and BH levels (p=0.02, p=0.03, p=0.02, respectively).

Conclusion: In acromegalic patients, visfatin levels increase with IGF1 and GH levels. In addition, glucose metabolism impairment also increases visfatin levels. This adipokine may also be effective in systemic inflammation in acromegaly. The results of our studies with more patients should be verified.

Table 1. Data of the working group.

	Akromegali grubu (n=34)	Kontrol grubu (n=53)	p
Age (years)	44.8±12.8	46.87±13.39	NS
Gender(F / M)	22/12	37/16	NS
Visfatin (ng/ml)	**4.66±3.61**	**7.41±2.52**	**<0.01**
Glucose (mg/dl)	104.21±32.13	108.88±34.1	NS
Total cholesterol (mg/dl)	213±49.90	194.25±41.11	NS
LDL cholesterol (mg/dl)	125.22±44.02	109.96±36.01	NS
Triglycerides (mg/dl)	154.41±69.93	141.71±77.39	NS
HDL cholesterol (mg/dl)	59.21±14.64	55.92±14.69	NS
Insulin (µU/ml)	13.85±8.76	14.13±11.19	NS
HOMAIR	3.67±2.74	3.85±3.54	NS
HbA1c %	**5.84±1.18**	**6.14±0.94**	**0.007**
IGF1 (ng/ml)	**135.47±46.25**	**287.49±169.07**	**<0.01**
gH (ng/ml)	**0.97±1.80**	**7.65±1.67**	**<0.01**
BMI (kg/m²)	29.25±5.31	30.64±6.02	NS
Epicardial fat tissue	0.40±0.10	0.42±0.10	NS
Waist circumference (cm)	98.77±12.88	94.57±13.39	NS
Hip circumference (cm)	110.71±11.02	108.37±10.69	NS

The data are presented as mean±standard deviation, P<0.05 was considered statistically significant.

DOI: 10.25179/tjem.20182202-P064

Table 2. Correlation analysis between visfatin and other parameters.

	Acromegaly + Control group	
Visfatin N=87	**r value**	**p value**
Age (years)	0.110	0.310
Waist circumference (cm)	0.095	0.394
Hip circumference (cm)	0.008	0.946
BMI	0.090	0.411
Glucose (mg/dl)	0.143	0.189
Insulin (µU/ml)	0.066	0.551
HOMA	0.090	0.410
Hb A1c %	**0.245 ***	**0.024**
Total cholesterol(mg/dl)	0.055	0.615
Triglycerides (mg/dl)	0.056	0.613
HDL cholesterol (mg/dl)	0.025	0.824
LDL cholesterol (mg/dl)	0.053	0.634
GH (ng/ml)	**0.259 ***	**0.017**
IGF1 (ng/ml)	**0.235 ***	**0.029**
Epicardial fat tissue	0.083	0.541