



THE CONTENT OF ADIPOCYTOKINES (RESISTIN, ADIPONECTIN) IN TYPE 1 DIABETIC PATIENTS ASSOCIATED WITH THE AMOUNTS OF FAT COMPONENT

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BACKGROUND:

Adipocytokines produced by adipose tissue cells, and their action is often systemic in nature. Connection of some adipocytokines (resistin) with the development of autoimmune diseases such as type 1 diabetes (T1DM) is a perspective view.

The aim of study was to assess the association between adipocytokines (resistin, adiponectin) and content of fat mass in T1DM.

SUBJECTS AND METHODS:

- 95 patients with T1DM (60 women, 35 males) (mean age: 30,6 (24,9-37,5)yrs, duration of DM: 13 (7-20)yrs, age of manifestation: 17 (12-23)yrs, HbA1c: 8,2 (7,6-8,9)% and 55 (31 women, 24 men) control were examined.

The research involved:

- ✓ Anthropometry of patients
- ✓ General clinic examination
- ✓ Dual energy X-ray absorptiometry (Body composition program)
- ✓ Fat mass distribution research was based on Total Body, Android, Gynoid, A/G Ratio, Trunk/Total, (Arms+Legs)/Trunk parameters
- ✓ A fat mass index (FMI) was measured as total fat mass/height²

RESULTS:

There were no differences in the parameters of fat component in women and men with compared with control groups (table 1 and 2).

Table 1 - Parameters of the content and distribution of the fat component in the examined women, Me (LQ-UQ) or M±δ

Parameter	T1DM women, n=59	Controls, n=31	p
Android Fat `(%)	33,8 (27,1-38,1)	32 (25,6-37,9)	U=891,5; p=0,848
Gynoid Fat (%)	42,9 (37-46,7)	41,9 (35,3-46,6)	U=872; p=0,721
A/G Ratio	0,77±0,14	0,76±0,16	p=0,953
Total Body Fat (%)	34,5 (29,3-38,6)	32,6 (26,5-37,2)	U=820; p=0,425
Trunk/Total (Fat)	0,45±0,05	0,45±0,06	p=0,662
Legs/Total (Fat)	0,42 (0,38-0,45)	0,41 (0,38-0,44)	U=900,5; p=0,909
(Arms+Legs)/Trunk (Fat)	1,18 (1-1,33)	1,12 (0,93-1,28)	U=857,5; p=0,631
FMI, kg/m ²	7,52 (6,15-9,51)	6,68 (5,02-8,77)	U=761, p=0,194

Table 2 - Parameters of the content and distribution of the fat component in the examined men, Me (LQ-UQ) or M±δ (95 CI)

Parameter	T1DM women, n=59	Controls, n=31	p
Android Fat `(%)	25,4 (18,8-37,1)	30,2 (20,75-35,4)	U=362; p=0,588
Gynoid Fat (%)	28,1 (24-32)	28,05 (19,95- 32,35)	U=356,5; p=0,528
A/G Ratio	0,91 (0,75-1,11)	1,09 (0,98-1,13)	U=285,5; p=0,075
Total Body Fat (%)	21,3 (17,5-28,5)	23,95 (15,8-26,6)	U=385; p=0,865
Trunk/Total (Fat)	0,52 (0,46-0,56)	0,54(0,52-0,57)	U=302; p=0,131
Legs/Total (Fat)	0,37 (0,31-0,41)	0,33 (0,3-0,36)	U=308; p=0,157
(Arms+Legs)/Trunk (Fat)	0,83 (0,71-1,08)	0,79 (0,69-0,87)	U=302; p=0,131
FMI, kg/m ²	0,83 (0,71-1,08)	5,8 (3,36-6,79)	U=378, p=0,777

- ✓ The patients with T1DM have significantly higher than the control levels of serum resistin – 0,46 (0,35 - 0,69) vs 0,37 (0,3 - 0,49)ng/ml; U=581;p=0,034 (Fig. 1).

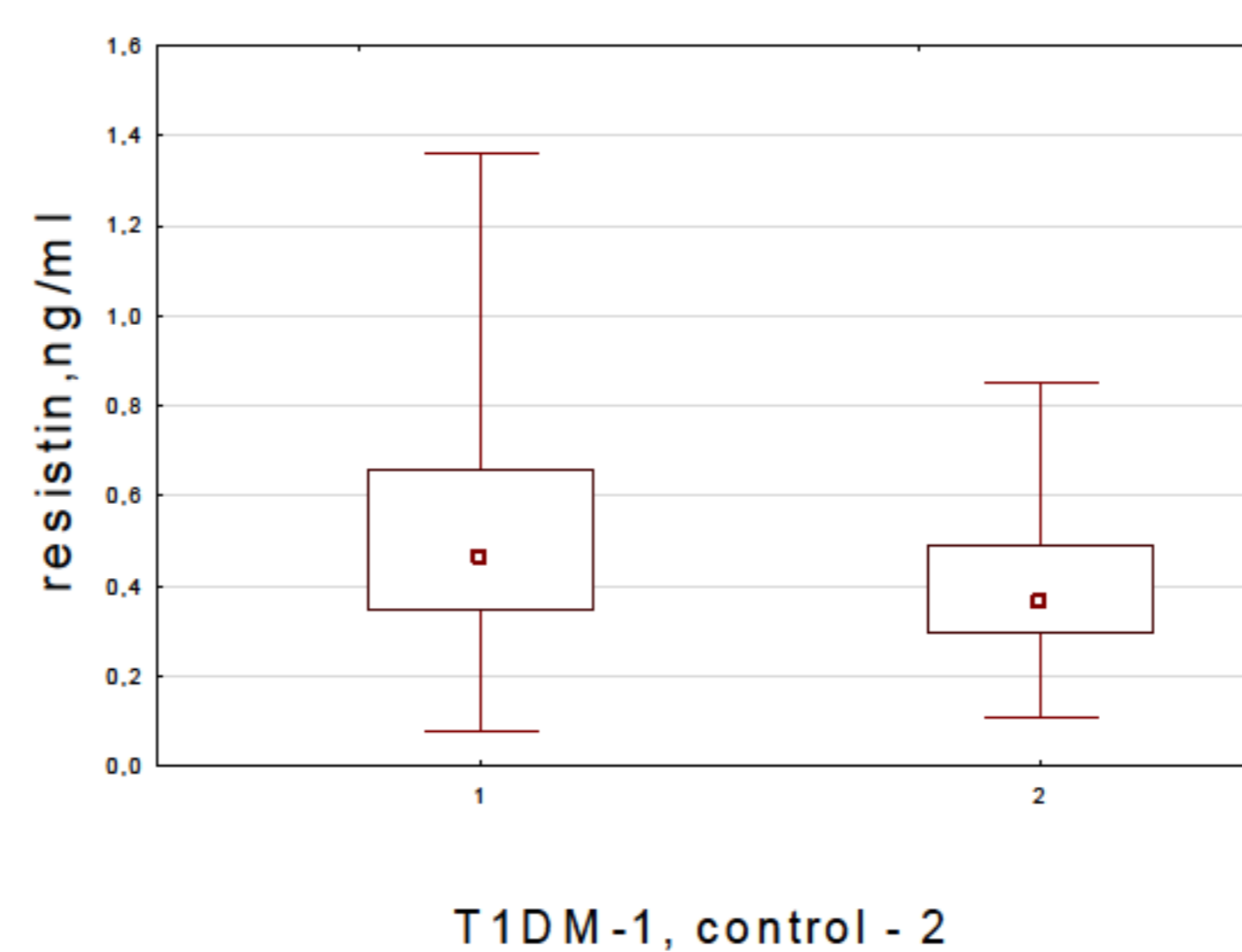


Figure 1 - Levels of serum resistin

- ✓ The contents of adiponectin in patients with T1DM comparable to healthy individuals (27,77 (27,1-28,42) vs 28,02 (27,38-28,4)ng/ml, U=790,5;p=0,847) (Fig.2).

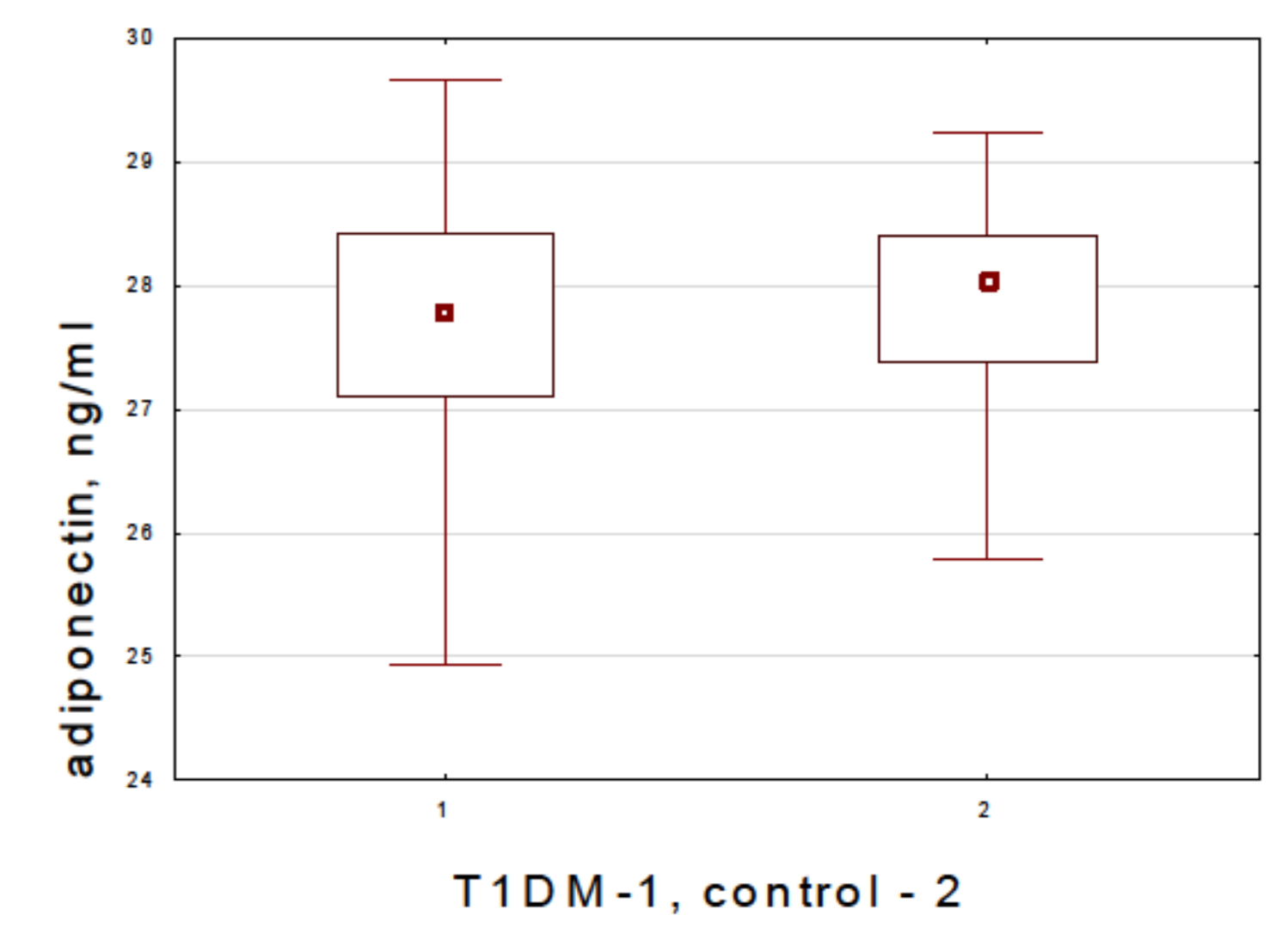


Figure 2 - Levels of serum adiponectin

- ✓ There was medium negative correlation between serum levels of resistin and FMI ($\rho = -0,48$; $p = 0,004$) in women with T1DM.

CONCLUSIONS:

Elevated levels of resistin may be associated with the presence of an autoimmune process in the development of diabetes. Influence of the level of resistin on content of fat mass in patients with T1DM needs further study.