



Serum catestatin levels in obese children and adolescents



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OBJECTIVE

- Catestatin is a chromogranin A-derived peptide with a wide spectrum of biological activities such as inhibition of catecholamine release, stimulation of histamine release, reduction of beta-adrenergic stimulation and regulation of oxidative stress.
- The aim of our study was to determine serum catestatin levels in obese paediatric patients regarding the presence or absence of the MS, thus assessing the relationship of catestatin with other cardiovascular risk factors.

METHODS

- Ninety-two obese subjects with BMI z score > 2, aging 10 to 18 years and thirty-nine healthy normal weight controls were enrolled in the study.
- Clinical and anthropometric assessment, family history and fasting laboratory assessment (glucose, insulin, lipids and catestatin) parameters were measured.

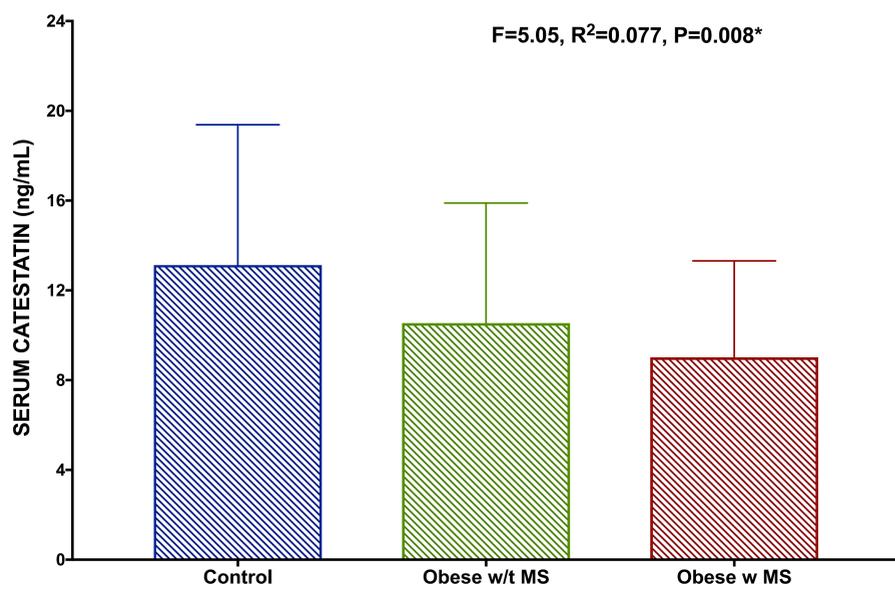
RESULTS

- Serum catestatin levels were significantly lower in the group of obese subjects compared to a control group (10.03±5.05 vs. 13.13±6.25 ng/mL, P=0.004).
- Further analysis showed that catestatin levels were significantly lower in the subgroup of obese patients with MS (9.02±4.3 vs. 10.54±5.36 vs. 13.13±6.25, P=0.008).
- Catestatin serum levels demonstrated significant negative correlation with diastolic blood pressure (DBP) (r = -0.253, P = 0.014), homeostatic model assessment of insulin resistance (HOMA-IR) (r = -0.215, P = 0.037) and high sensitivity C-reactive protein (hs CRP) (r = -0.208, P = 0.044).

Table 1. Demographic and anthropometric characteristics of the subjects

Parameter	Obese subjects (N=92)	Control group (N=39)	P
Sex – N (%)			
Male	52 (56.5)	18 (46.2)	0.339
Female	40 (43.5)	21 (53.8)	
Age (yr)	13.95 ± 2.32	14.36 ± 2.17	0.344
Body height (cm)	166.2 ± 16.16	165.9 ± 10.59	0.906
Body weight (kg)	87.58 ± 19.05	56.13 ± 11.46	<0.001
BMI (kg/m ²)	30.66 ± 3.59	20.19 ± 2.54	<0.001
BMI z score	2.74 ± 0.46	0.18 ± 0.76	<0.001

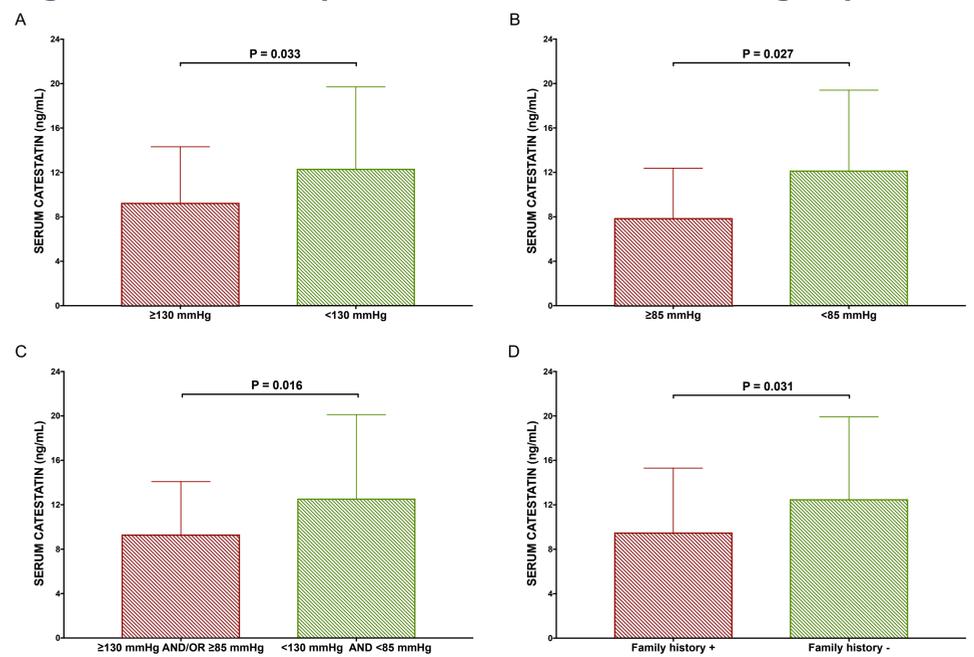
Figure 1. Serum level of catestatin



CONCLUSION

- To our best knowledge, this is the first report of catestatin levels in obese children and adolescents and its possible relation with MS and cardiovascular risk factors in childhood. Obese subjects with MS have lower serum levels of catestatin compared to obese subjects without MS and controls.

Figure 2. Relationships of catestatin levels with subgroups



A Subgroup with elevated systolic blood pressure; B Subgroup with elevated diastolic blood pressure; C Subgroup with elevated systolic and/or elevated diastolic blood pressure; D Subgroup with positive family history for high blood pressure.

REFERENCE

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