



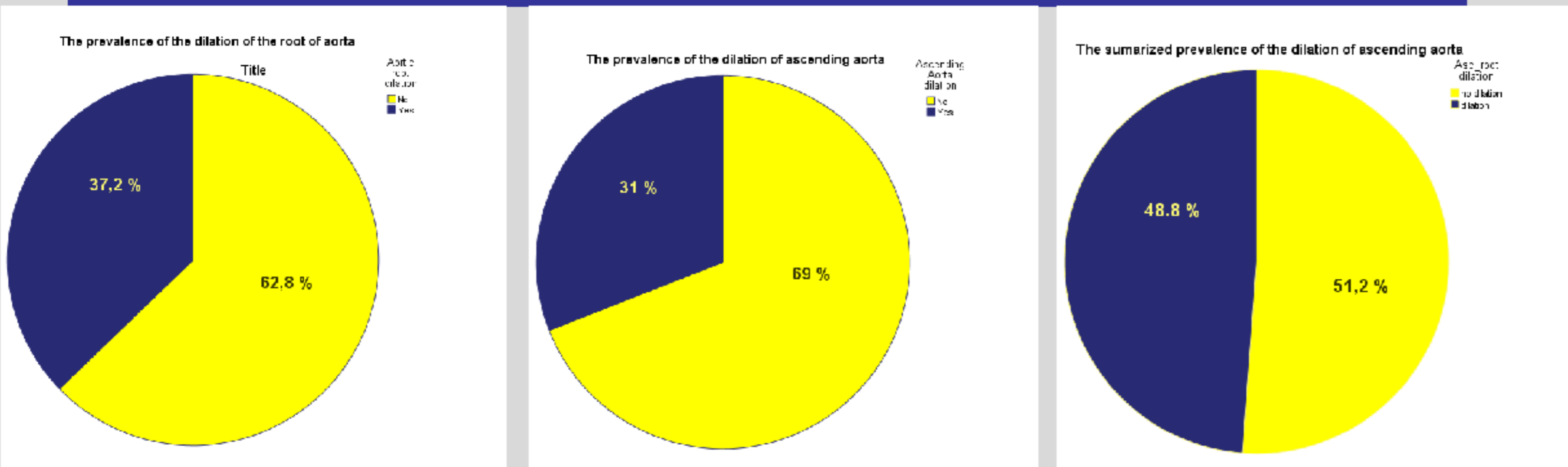
## INTRODUCTION

The dilation of aorta (AD) is the life threatening complication of Turner syndrome (TS) [1]. The reported prevalence of AD in TS varies between 12-39 % [2, 3]. Factors predicting the enlargement of the diameter of aorta (DA) are still under investigation [4, 5].

## AIM

To assess the prevalence of AD in TS in Lithuanian population, to evaluate the possible predictors of AD development.

## RESULTS



Graph 1. The prevalence of the dilation of ascending aorta in TS Lithuanian population.

The dilation of the root of aorta (ADR) was reported in 37.2 % (n=16) of the cases, the dilation of ascending (ADA) aorta was observed in 31 % (n=13). When summarized ADR and ADA the prevalence of AD increased up to 48.8 % (n=21), graph 1.

Table 1. ADR correlation with the risk factor of the enlargement aorta

Risk factor	Correlation (r)	p
BMI	(-) 0,7	<0,001
HOMA index	(-) 0,408	0,009
E initiation age	(-) 0,33	0,031
HR	0,37	0,014
Duration of E use	0,347	0,023
T level	(-) 0,34	0,028
Age	0,071	0,652
Final height	(-) 0,158	0,311
Duration of GH use	0,199	0,21
Fasting glucose	0,226	0,145
Total cholesterol	0,256	0,102
Mean day BP	(-) 0,238	0,149
Mean night BP	(-) 0,063	0,727

Table 2. ADA correlation with the risk factors of the enlargement of aorta

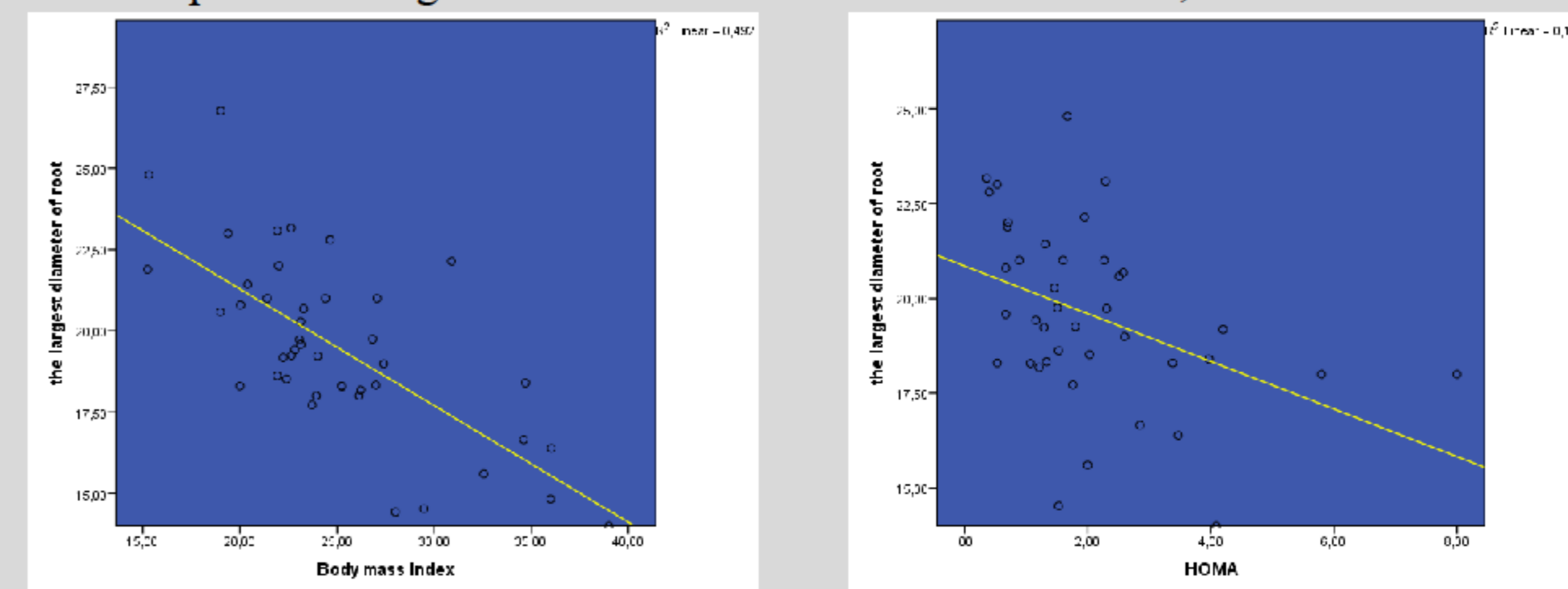
Risk factor	Correlation (r)	p
BMI	(-) 0,376	0,014
HOMA index	(-) 0,151	0,36
E initiation age	(-) 0,250	0,115
HR	0,265	0,089
Duration of E use	0,033	0,833
T level	(-) 0,380	0,014
Age	(-) 0,067	0,674
Final height	(-) 0,118	0,457
Duration of GH use	0,406	0,009
Fasting glucose	(-) 0,152	0,336
Total cholesterol	0,034	0,833
Mean day BP	0,031	0,856
Mean night BP	(-) 0,029	0,876

## METHODS

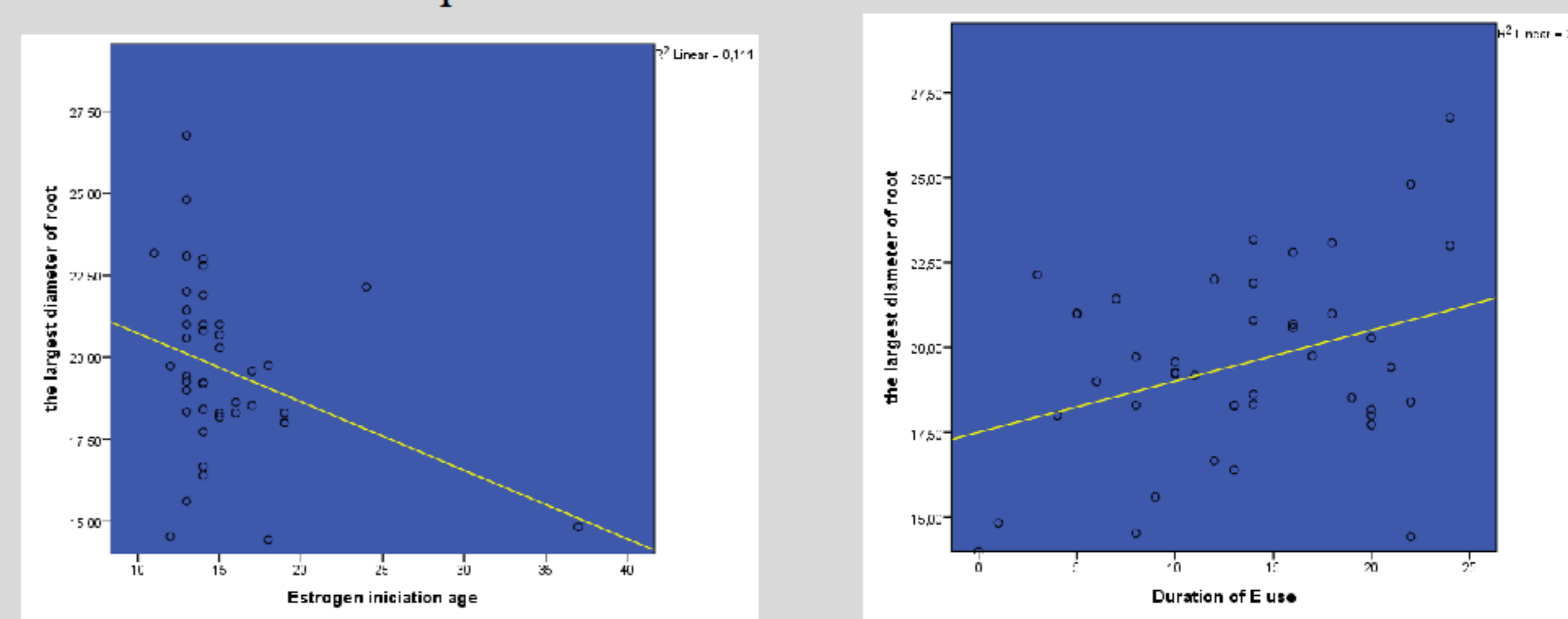
43 patients with TS aged  $\geq 18$  year were enrolled into the prospective cross-sectional study. Echocardiography was used to evaluate DA. DA was adjusted for body surface area. AD was defined as DA  $> 2,0$  cm/m<sup>2</sup>.

Age, congenital cardiovascular disorders (CCD), karyotype, metabolic parameters (body mass index (BMI), HOMA index), heart ratio (HR), blood pressure (BP), Estrogens (E), Testosterone (T) level, duration of Growth Hormone (GH) and E use, E initiation time were evaluated in the relation to AD.

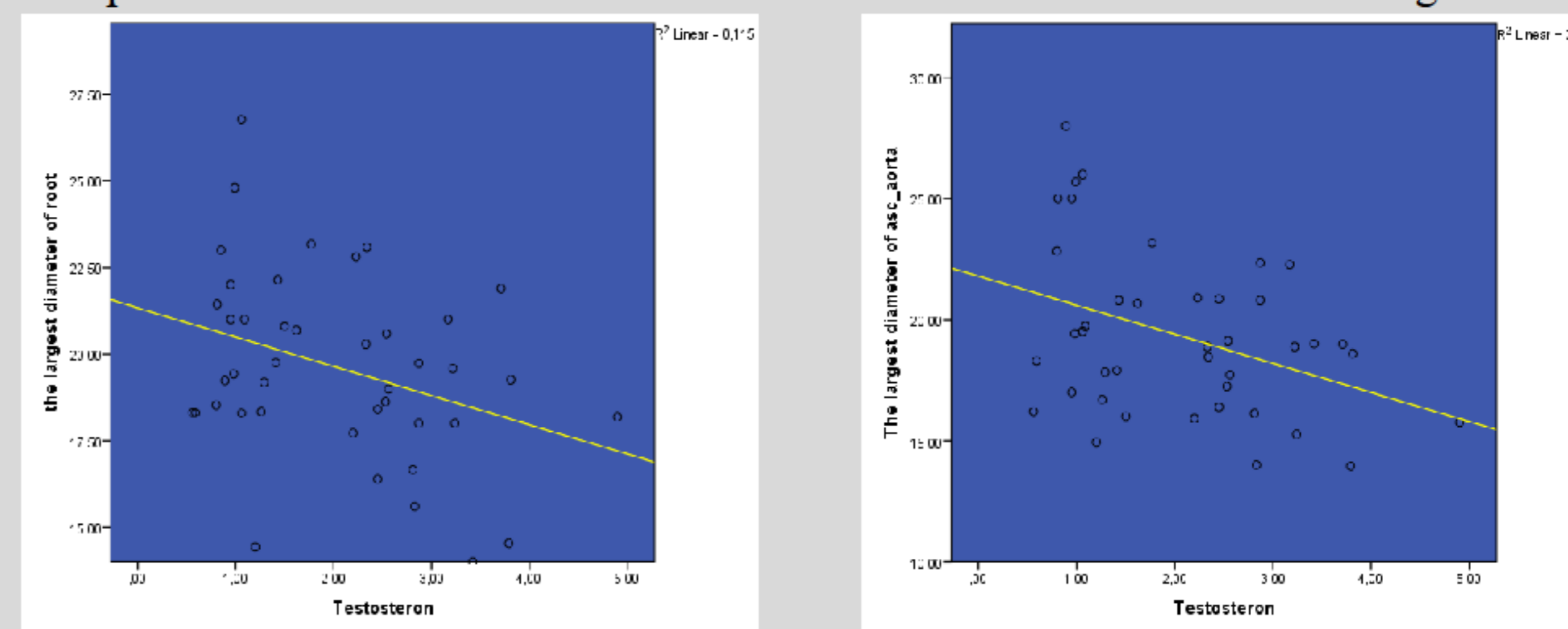
Graph 2. The negative correlation between ADR and BMI, HOMA index.



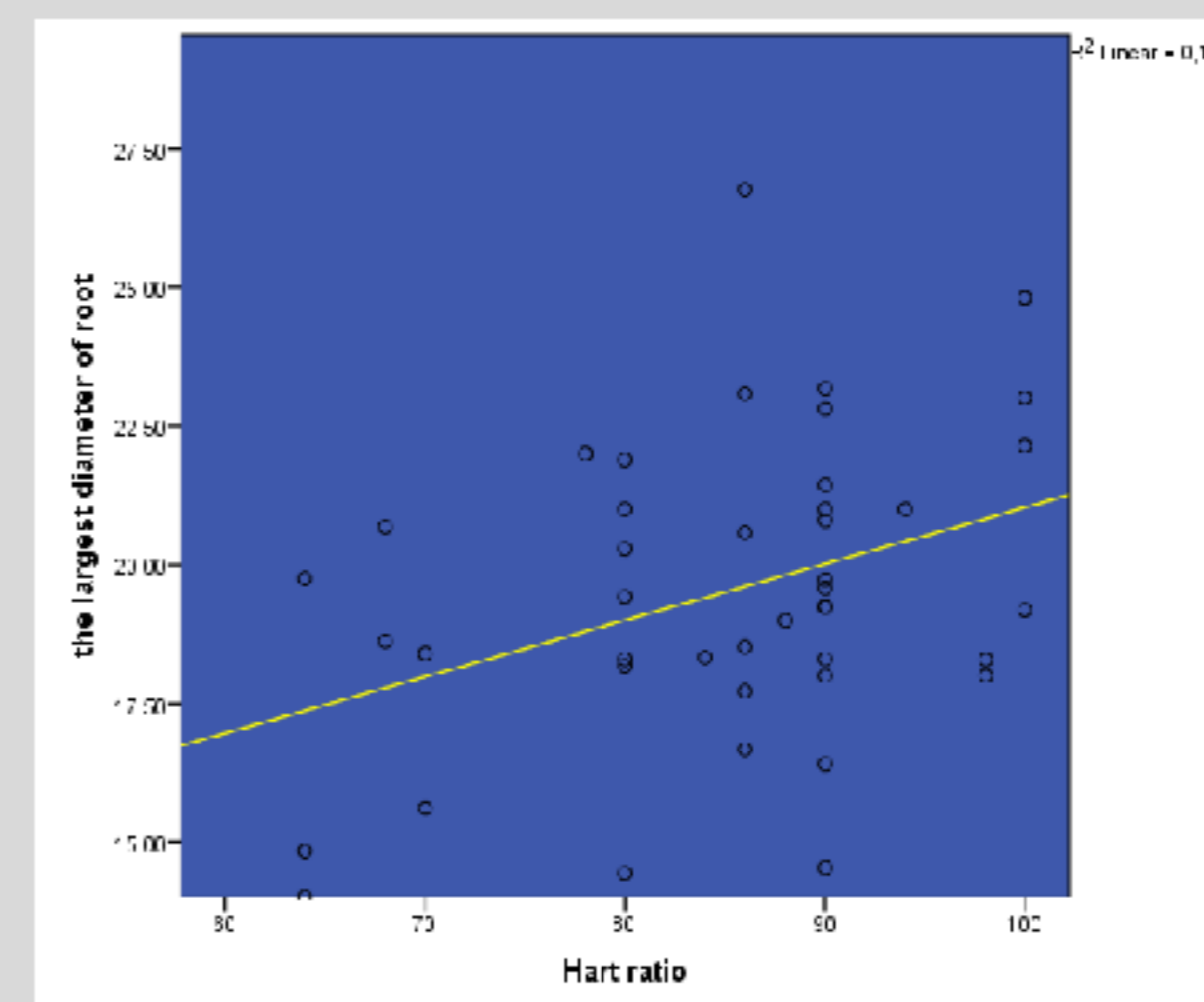
Graph 3. Use of E correlation with ADR



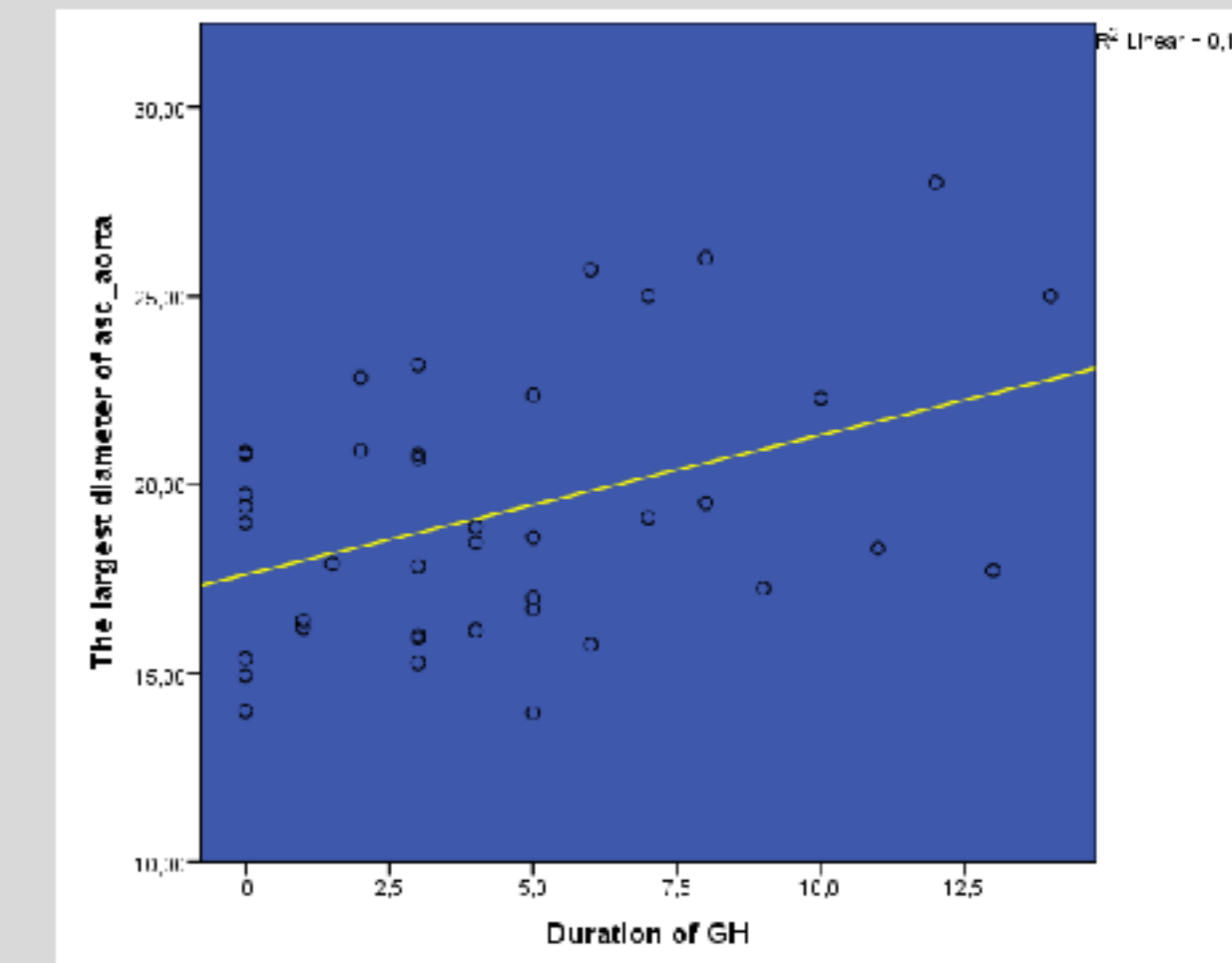
Graph 4. Testosterone level in the association with the diameter of ascending aorta



Graph 5. The correlation between ADR and HR



Graph 6. The correlation between duration of GH use and ADA



The frequency of AD did not differ between the classic (45,X0) and nonclassic karyotype (non-45,X0) or the presence of CCD. There was no significant relationship between BP or age and DA.

## CONCLUSIONS

The prevalence of AD in TS in Lithuania was higher than reported in other studies. Significant correlation between sex hormones, use of GH and DA was observed. HOMA index correlation with AD was identified for the first time.

## References

- Kriksciuniene R, Ostrauskas R, Zilaitiene B. (2015) Aortopathies in turner syndrome - new strategies for evaluation and treatment. Endokrynol Pol 66(1): 58-65.
- Kriksciuniene R, Zilaitiene B, Verkauskiene R. (2016) The current management of turner syndrome. Minerva Endocrinol 41(1): 105-121.
- Donadille B, Rousseau A, Zenaty D, Cabrol S, Courtillot C, et al. (2012) Cardiovascular findings and management in turner syndrome: Insights from a french cohort. Eur J Endocrinol 167(4): 517-522.
- Bondy CA, Van PL, Bakalov VK, Ho VB. (2006) Growth hormone treatment and aortic dimensions in turner syndrome. J Clin Endocrinol Metab 91(5): 1785-1788.
- Mortensen KH, Erlandsen M, Andersen NH, Gravholt CH. (2013) Prediction of aortic dilation in turner syndrome—the use of serial cardiovascular magnetic resonance. J Cardiovasc Magn Reson 15: 47-429X-15-47.

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