THE GLYCEMIC VARIABILITY IN CHILDREN WITH DIABETES MELLITUS

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The glycemic variability (GV) - is the scope of changes in blood glucose levels for a certain period of time. In patients with diabetes mellitus type 1 (DM1), GV are more pronounced, especially in children.

The aim: analyze the glycemic variability in children with diabetes mellitus.

Materials and methods: 126 children aged from 6 to 17 years with duration from DM 16 years were examined. Investigated: glycated hemoglobin (HbA1c), insulin demand, insulin therapy method. Computed by GV: CV, SD, MAGE and the amplitude of the oscillations according to the scatter profiles of blood glucose. The basis was taken CV, as an indicator reflecting not only the fluctuations themselves, but also the level of glycaemia in which they occur.

Results. The analysis of HbA1c and CV values resulted in a negative correlation ($r = -0,216$, $p<0,05$). Correlation analysis showed a strong relationship between the studied indicators of blood glucose. The largest relationship in this case are the amplitude and SD ($r = 0,965$,$p<0,01$) (figure 1).

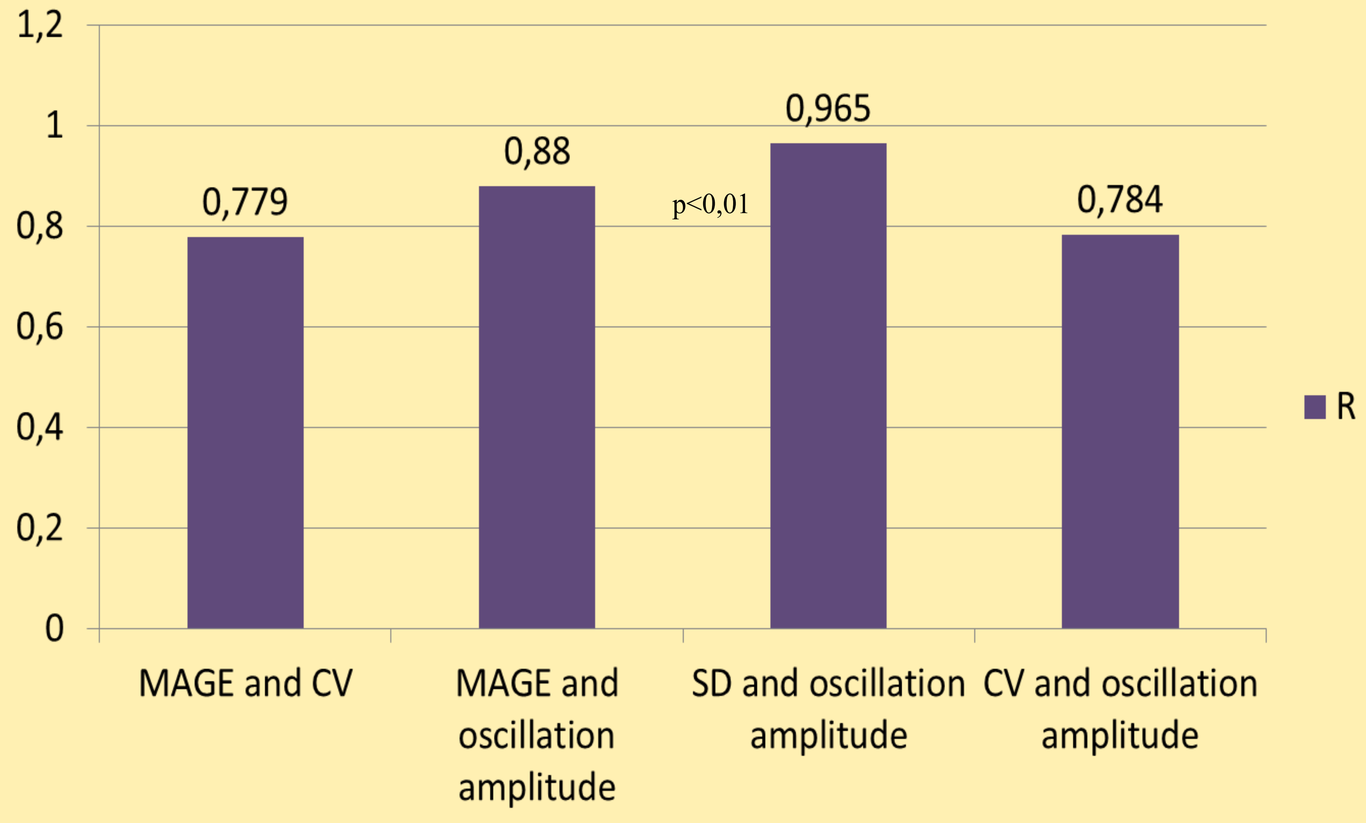

figure 1— correlation of the glycemic variability indicators

Having estimated influence of duration of disease on GV it was received that interrelation of indicators of GV with duration of disease had no statistical significance.

Analysis of the method of insulin therapy and daily insulin requirements did not reveal any statistically significant correlation with CV, $p>0,05$.

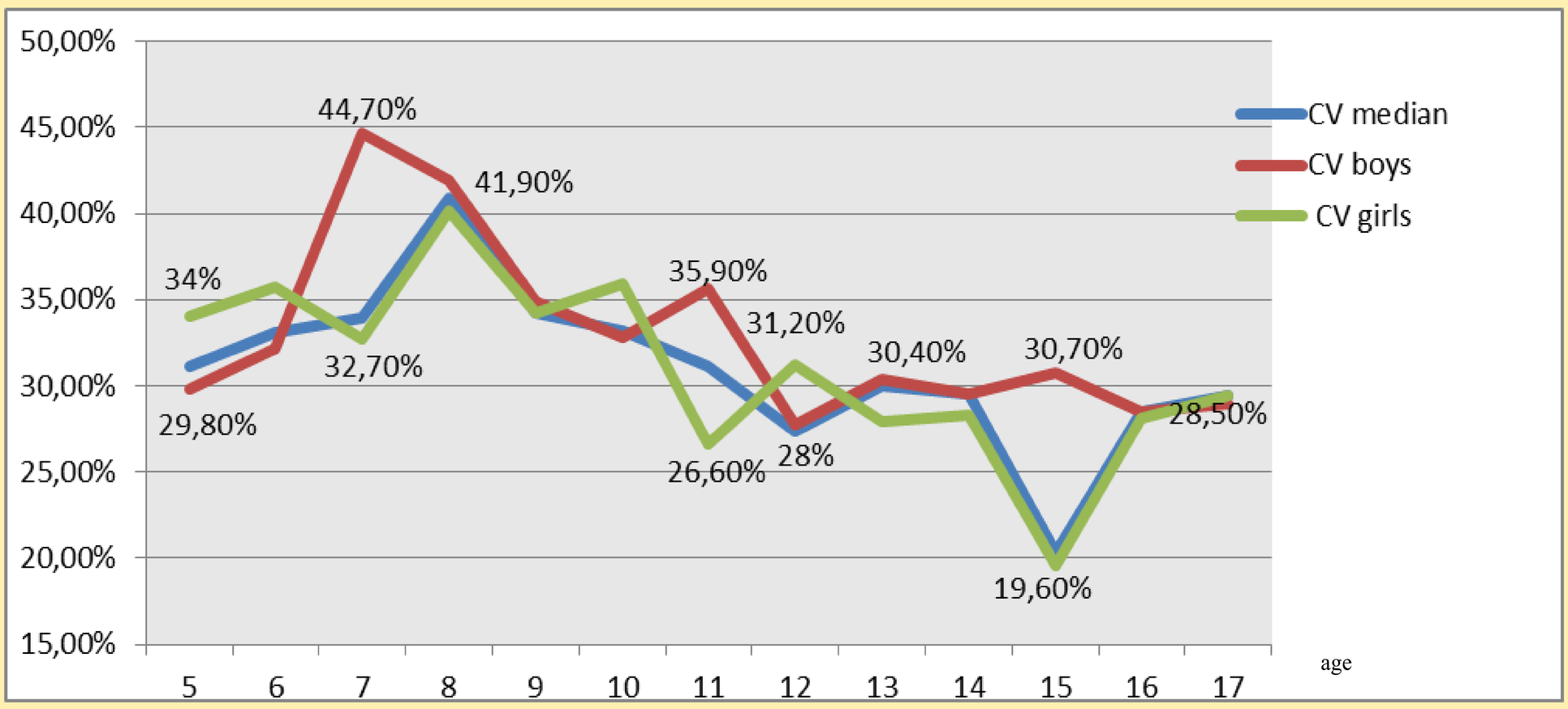

figure 2— coefficient of variation of glycaemia depending on age and sex

Summary. The glycated hemoglobin does not reflect the glycemic variability. The considered methods of evaluation of glycemic variability can be used both in isolation and in complex in assessing the degree of compensation of diabetes mellitus. The glycemic variability does not depend on the duration of the disease, insulin dose and insulin therapy. However, there is an inverse dependence of glycemic variability on the age of patients with "peaks" in 7-8 years and 13 years.