Alterations of left ventricular myocardial characteristics associated with growth hormone replacement therapy for short stature children.

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The change of a myocardium characteristics during growth hormone (GH) replacement therapy is not clear to date in short stature children. It is intended to clarify the change of myocardium using echocardiographic left ventricular mass.

Objects(patients).
We studied 35 (male 21) short stature patients undergoing GH replacement therapy.
Age at echocardiography is 4.3 to 17.1 years old.
Their disease was growth hormone deficiency (n=18), hypochondroplasia (n=13), SGA (n=3) and Turner syndrome (n=1).

Objects (controls).
Serial heart examination consultation patients 124.
Exclusion criteria: With moderate to more congenital heart disease (Ventricular septal defect, Atrial septal defect), moderate to more regurgitation (Aortic valve).
Finally examined 118 patients.

Parameters.
Left ventricular mass
1)M mode: Devereux formula
 $0.8[1.04\{(IVSD+LVEDD+LVPEDD)^3-(LVEDD)^3\}]+0.6$
IVSD: Interventricular septal diameter, LVEDD: Left ventricular end diastolic diameter, LVPEDD: Left ventricular posterial enddiastolic diameter.

2)2D: area length method
3)4D: automatic mesurement

Statistical analysis.
BellCurve for Excel
ANOVA, Turkey.

Results.
Patients.
35 (male=21)
0-5 years: 8, 6-12 years: 15, ≥ 13 years: 12.
Controls.
124 (male=68)
Excluded 6.
Finally 118 (male=62).
0-5 years: 14, 6-12 years: 64, ≥ 13 years: 40.

Conclusions.
The difference of left ventricular mass was not recognized between GH replacement therapy group and control groups.
The treatment group which I examined in 4D showed a high left ventricular mass. There is room for consideration for the evaluation of the left ventricle mass.
In the examination of the treatment period, the revision left ventricle cardiac mass showed a constant value and did not recognize the change for myocardium growth.

Summary.
The growth of the left ventricle myocardium of the infant who received growth hormone replacement therapy was not different from controls, and the specific myocardium thickening did not accept it.