

Intima-media thickness measurements in children after end- to-end operation of coarctation of the aorta

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The measurements of carotid intima-media thickness (cIMT) is a good predictor of arterial wall damage, atherosclerosis, in adults with arterial hypertension, recommended by European Society of Hypertension. Data on cIMT in children after end-to- end operation of coarctation of the aorta (CoA) are not available.

AIMS: to check the relations between the cIMT and the time of surgical repair, the duration of follow-up, and arterial hypertension in children after end-to-end operation of CoA.

MATERIAL AND METHODS:

In 50 pts operated at the age below 3 mths (I group – 15 pts) and after 3 mths (II group – 35 pts) ABPM and cIMT measurements were performed 8.82±1.94 and 10.71±1.96 years after end-to-end operation of CoA. The groups with (HT+) and without (HT-) arterial hypertension were established on the base of ABPM results. The mean age of pts at the time of first and second assessment were 10.14±3.57 and 12.18±3.53 yrs.

RESULTS:

Arterial hypertension was found in 35% of pts (20% of I group and 43% of II group). Increased right cIMT (with reference to norms for age and sex) was found in 35% of pts, left cIMT in 33% of pts. cIMT was slightly increased in group II and HT+ .

There was a moderate correlation between the mean value of right arm systolic blood pressure and right cIMT ($r<0.36$, $p<0.02$) and moderate correlation between age at operation and right and left cIMT ($r<0.44$, $p<0.01$ and $r<0.43$, $p<0.01$).

There were no statistically significant difference in right and left cIMT between two examinations (the study was repeated after 1.97±0.28 yrs).

CONCLUSIONS

- In 33% of patients after end-to-end operation for coarctation of the aorta carotid IMT is increased in long follow-up.
- There are significant, positive correlations between carotid IMT and right arm systolic blood pressure, the age at surgery and the duration of follow-up.
- It seems to necessary to examine a more patients for assessment a importance of measurements of IMT in patients after operation of coarctation of the aorta