

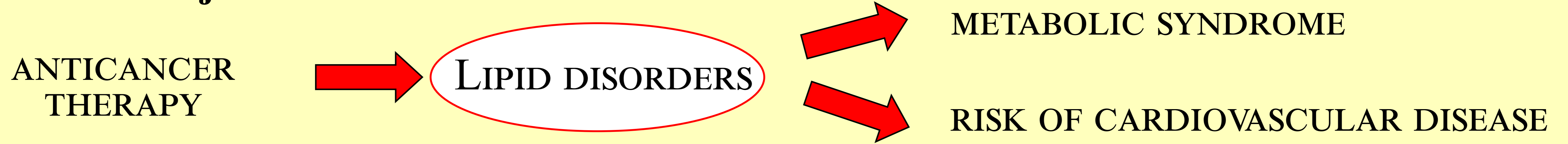
Risk factors for atherosclerosis after anticancer treatment in childhood.

The assessment of lipid parameters and indicators of susceptibility to atherosclerosis in a group of pediatric patients after anticancer treatment.



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Background and objectives



Aim—to evaluate lipid profile in children after anticancer treatment

Materials and methods

STUDY GROUP

- 44 patients; 3,25-16 years (mean 9.38± 3.57; median 9.09)
- Solid tumors
- >1 year after cessation of treatment

CONTROL GROUP

- 31 healthy children

EVALUATED PARAMETERS

- cholesterol SDS, triglycerides SDS,
- LDL-C SDS, HDL-C SDS,
- weight SDS, height SDS,
- BMI SDS.
- Statistical distances between groups
- Indicators of susceptibility to atherosclerosis

Results

The risk factors of dyslipidemia (τ) in the study and in the control group

- Comparison of median in the cholesterol SDS, HDL-C SDS, LDL-C SDS, TG SDS
- Calculation of the **statistical distance** between the study group and the control group,

$$\tau = \frac{[(E_i - O_i)^2] \times 100}{E_i}$$

E_i = median in the control group;
 O_i = median in the study group

increased risk of lipid disorders – positive sign (+)
reduced risk of lipid disorders – negative sign (-)

Evaluated parameters	Decreased	Normal	Increased
Total cholesterol SDS	1 (2,27%)	23 (52,27%)	20 (45,46%)
LDL-C SDS	0 (0%)	35 (79,55%)	9 (20,45%)
TG SDS	2 (4,55%)	31 (70,45%)	11 (25%)
HDL-C SDS	3 (6,82%)	36 (81,82%)	5 (11,36%)

Tab.2 Lipid parameters in study group

Compared parameter	Median		The risk factor of developing lipid disorders
	Study group	Control group	
Total cholesterol SDS	1,43	0,49	180,3
LDL-C SDS	0,83	0,60	8,82
TG-SDS	-0,17	-0,36	10,03
HDL-C SDS	-0,03	-0,54	-48,17
The risk of increased cholesterol SDS, LDL SDS and TG SDS was higher in study group than in controls			Suma (τ) 150,98

Tab.1 The risk factors of disorder of lipid metabolism in children in the treatment group compared to the control group.

Elevated values of susceptibility to atherosclerosis in study group	
index Castelli (total cholesterol - HDL-C / HDL-C)	11.36%
cholesterol C/HDL-C	11.36%
LDL-C/HDL-C	29.55%

Tab.3 Risk of atherosclerosis in study group

OVERWEIGHT/OBESITY IN STUDY GROUP → **30,24%**

Conclusions

- 1) Lipid disorders are a common complication among children after anticancer treatment.
- 2) Children after anticancer treatment require monitoring lipid parameters because of much higher risk of complications compared to healthy children.