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Abstracttitel:	ADVANTAGES NORMOTHERMIC CARDIO PULMONARY BYPASS DURING AORTIC VALVE REPLACEMENT Juri Petrishchev, Alexander Levit Clinical Hospital, Yekaterinburg, Russia

Introduction. The aim of the present study was to investigate the oxygen status during hypothermic and normothermic CPB in aortic valve replacement.

Methods. After the approval of Hospital Ethics Committee 40 patients were randomly divided into two groups: 1 (n=20) – hypothermic mode (30.0±1.2 °C) and 2 (n=20) - normothermic mode of CPB (36.6±0.5 °C). In both groups the aortal valve replacement was provided by one surgical team. There were no differences between groups in age, gender, severity of cardiac failure, methods of general anesthesia and cardioplegia. The parameters of the oxygen status (oxygen extraction tension - Px, oxygen compensation factor - Qx, extractable oxygen concentration – Cx) were calculated. T-test was used for statistical analysis.

Results. There were no significant differences between groups in parameters of the central (thermodilution) and cerebral hemodynamic (transcranial Doppler). DO_2, VO_2 and Px were significantly lower during hypothermic CPB (Table).The abnormalities of the oxygen status were observed after surgery in the hypothermic group too.

	group	5 min CPB	30 min CPB	60 min CPB	18 h after surgery
DO_2	1	287.8±39.87	228.1±43.51*	247.1±43.63*	426.4±86.66
	2	273.3±48.15	286.3±44.08	294.6±48.58	438±70.53
VO_2	1	39.2±24.68	30.84±14.59*	34±16.03*	75.13±42.74
	2	48.37±15.75	60.55±20.37	64.95±24.61	88.35±21.37
Px	1	14.84±7.73	9.46±7.33*	11.97±5.65*	28.73±4.83*
	2	11.35±7.414	16.15±9.2	19.34±6.87	33.38±3.39
Qx	1	2.96±1.31*	3.87±1.69	3.21±1.71	1.7±0.5
	2	4.32±1.69	3.59±1.72	2.84±1.31	1.26±0.28*
Cx	1	2.13±1.06	1.83±1.3	2.04±0.95	3.28±0.9*
	2	1.42±0.65*	1.81±0.94	2.1±0.7	4.21±0.73

During hypothermic perfusion the decreasing of oxygen extraction ratio and V_{O_2} was closely related to the low tissue availability to hemoglobin-linked oxygen, while at normothermia oxygen contained in blood was more accessible to tissues.

Conclusion. The results obtained have suggested that normothermic mode of CPB creates the best conditions for optimal oxygen status during and after aortic valve replacement.