DEFROSTING VARIANTS OF CRIOPRESERVED A ALLOGRAFTS BEFORE IMPLANTATION

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Aim. To optimize the defrosting process of cryopreserved allografts.

Material and methods. 27 criopreserved allografts of aortic and pulmonary allografts were studied. 14 valves were taken in donors during multiorgan harvesting, 13 – from cudavers during the first 12 hours after death. Allografts were sterilized in antibiotics solution, which contained nourishing medium, zefasoline, metronidozol, flucanazol. Criopresevation was conducted in a programmed refrigerator with the speed 1°C degree per minute to the temperature – 80°C. dimethylsulfoxid was used as the crioprotector. The solution for cryopreservation was composed from the nourishment medium RPMI, dimethylsulfoxid and 10% human albumin. Defrosting was conducting in 3 regimens: with temperature 36-42°C during 15 minutes (n = 10); 2) with temperature 18-20°C during 35 minutes (n = 7); 3) with temperature 8-10°C during 1 hour (n = 10) [modification of RNPTs "Kardiology"]. Crioprotector removal was performedwith the gradual decrease of its concentration.

Results. Diameter and form of the allografts remained as previous ones after the process of defrosting in comparison with the initial specimens. Defrosted allografts had even density with the use of a different variants of defrosting. Microscopic evaluation of permits to confirm, that defrosting with the temperature 8-10°C does not lead to the appearance of ruptures in the wall of allografts. Strength characteristics studies with the use of hydraulic testing by the way of saline solution supercharging into the allograft in distal end and which coronary arteries were sewed up with prolene 3/0, did not show any difference in the allografts strength after defrosting with the different temperature regiments. Allografts defrosting under temperature 8-10°C and under temperature 18-20°C did not show any histological changes of allografts in cjmparison with the native valves.

Conclusions. Pulmonary and aortic allografts defrosting with temperature intervals from 8°C to 10°C during 1 hour is a optimum, as it privides in tegrity, strength of the allograft and intact its histological structure.

Keywords: cryopreserved allografts, preimplantation preparation.