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Pre-freezing factors with potential impact on the safety and quality of allogeneic transplantation of cryopreserved vascular grafts – Retrospective analysis

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The conditions of tissue collection and handling before start of freezing are critical for the safety and quality of transplantation of cryopreserved grafts. We analyzed risk factors, such as donor's age (DA), time between tissue harvest and mixing with the cryoprotectant (TP), exposure to the cryoprotectant before freezing (CPAE) and the initial contamination rate (ICR) in the group of 30 arterial (AG) and 30 venous grafts (VG) collected during the multiple organ harvests in brain death donors . Only grafts meeting the criteria of release for clinical application including the proof of sterility at output control were included. The grafts were transported in the pre-cooled organ preservation solution containing gentamycin to the tissue establishment and processed in the clean rooms of the grade A with the background B. After input control and decontamination procedure each graft was put into double plastic bag filled with 50 ml of pre-cooled 10% hydroxyethlystarch solution and an equal volume of pre-cooled 20% (v/v) dimethylsulphoxide solution was added. There were no considerable differences in values (mean ± SD) of DA, TE and CPAE between AG and VG: AG/VG: DA 45±11/46±9 years, TP 20±7/19±8 hours, CPAE 31±14/30±12 minutes. The ICR was lower in VG (6.6%) than in AG (16.7%). Mycological tests were always negative. The analyzed factors do not represent danger for the graft quality. The results demonstrate advantages of using aseptic harvest procedures and document the high level of cooperation between the tissue establishment and procurement establishments.

Biography

Mericka P graduated at the Charles University in Prague, Medical School Hradec Králové in 1976. In 1979 he received specialization in Pathology and in 1989 in Tissue Banking at the Institute for Post-graduate Medical Education in Prague. In 2006, he completed his PhD in Medical Biology. He is member of the Society for Cryobiology and took part in organization of several international cryobiology meetings. He is the Head of the Tissue Bank University Hospital Hradec Králové and External Teacher at the Charles University in Prague. He is author or co-author of 80 papers dealing mostly with cryobiology and tissue banking.

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