Current Trends in Tissue Banking

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Tissue and cell therapy is a field in which intense worldwide exchange is taking place. The European Community has therefore guaranteed to achieve the highest possible level of protection to safeguard public health regarding quality and safety of tissues and cells. The relevant Directive 2004/23/EC of the European Parliament and of The Council on Setting Standards of 'Quality and Safety for the Donation, Procurement, Testing, Processing, Preservation, Storage and Distribution of Human Tissues and Cells' and their complementary Directives 2006/17/EC and 2006/86/EC are now implemented into national law in the countries of the European Union. Alongside harmonized documentation of anamnesis and medical histories, testing for infection markers has always been of particular interest to physicians and regulators. Production and examination of tissue preparations have been adapted to the guidelines issued by authorities and specialist associations in the respective fields (musculoskeletal tissues, corneal tissue, heart valves), and evidence-based indication for transplantation has been discussed. In the present issue of TRANSFUSION MEDICINE AND HEMOTHERAPY the reader is introduced to current facets of tissue banking seen from scientific points of view.

By way of introduction, Meyer et al. [1] concern themselves with the question of viral genome stability in postmortal blood samples of up to 48 h. Although the paper offers only a relatively small number of test subjects, results are very informative and define promising future research priorities. In line with this subject, Gubbe et al. [2] point out possibilities of validating NAT systems by using postmortal specimen. Here, tissue bank personnel, and transfusion doctors will find advice and directions which enable them to carry out their own validations conforming to guidelines.

Since testing procedures relevant for pharmaceutical releases in tissue banking have usually been adapted to known methods, proof of suitability in the form of validations has frequently to be provided. Microbiological methods in particular often deviate from the standards of pharmacopeia. Schroeter

et al. [3] describe in a short original paper how a structured analysis of the suitability of microbiological test systems for the examination of femoral heads, cornea, and blood vessels can be performed with relatively small effort. In a second paper from this team, the question of endophthalmitis rates in corneal transplants from corneoscleral complexes or bulbus preparations is examined, and as a result well-founded recommendations for particular explantation techniques are defined for the first time [4].

The transplantation of human tissues and cells (musculoskeletal tissues, corneal tissue, cardiovascular tissue, skin and skin substitutes) is a strongly expanding field of medicine which offers great opportunities for the treatment of tissue defects. An interesting example of the clinical use of complex transplants is the case study presented by Brune et al. [5] in the context of custom-made allogeneic bone transplants.

Just like blood donation, tissue banking fundamentally depends on altruistic tissue donation. In addition to tissue preparation from living donors (femoral head, amniotic membranes) it is especially tissue recovery from deceased persons which meets the demand for transplants. One possible model of donor recruitment is drawn up in the report by Wulff et al. [6] on regional experiences of tissue donation and forensic medicine in Hamburg. In the last article of the issue, Knels et al. [7] make a closing recommendation with regard to the implementation of article X of guideline 2006/86/EC concerning coding and labeling of tissue preparations. The application of Eurocode IBLS (International Blood Labelling Systems) for tissue presented here has been supported and recommended by the 'Tissue Preparations' commission of the DGTI (Deutsche Gesellschaft für Transfusionsmedizin und Immunhämatologie / German Society for Transfusion Medicine and Immunohematology) as well.

The editors hope to have provide the reader with an interesting survey of current scientific projects in tissue banking which again point to the numerous interfaces between transfusion medicine and tissue banking.

References

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