

7. Summary

The Effect of Donor and Recipient Age on the Heterotop Transplanted Rat Heart, demonstrated by the Lewis-Fisher344-Model

The intention of this study was to proof the influence of donators and recipients age factor on the transplant rejection, supported by the representative allograft model.

For this investigation the Lewis-F344-Model was used, which effectiveness has been proved in previous research in human beings under long term conditions e.g. surviving (>30 days).

Serious reactions of tissue rejections were noticed in all groups, which had to be clarified and are comparable to the ISHLT-Standard 4.

However, a histological difference could be demonstrated between the groups concerning the type of the tissue rejection.

Group 1 (including old donator and old recipient) :

The recipients show a so-called mixed immunological response with serious cellular infiltrations, which consist of T- and B-cells and partly macrophages. A slight vascular participation could be noticed as well, also the beginning of a reparation process.

Group 2 (including old donator and young recipient) demonstrates a more delayed response immune response with a few cellular infiltrations and a slight vascular participation e.g. swollen endothel cells without any proliferation but showing a distinct reparation.

Group 3 (including young donator and old recipient) :

In this group the recipients show the same mixed immunological response as noticed in group 1 with serious cellular infiltration, partly massive vascular participation and reparation at the beginning. Because of the recipients distinct immune system, the transplant could be specifically influenced especially to the humoral immune response. Most of the recipients showed tremendous cicatrisation.

Group 4 (including young donator and young recipient) :

The recipients of this group show positively to strong positively cellular infiltrations and the number of blood vessels in these animals increased obviously. On the other hand there were not many morphological alterations in these vessels noticed.

On the base of these experiments it can be said that the development of the TVP is more likely if the donor or the recipient is adult.

So far there are not many investigations and studies done concerning this important issue. Therefor it seems to be very necessary to do further scientific research - for example varying the age of the donor and the recipient or using a different period of time.

In this study the rats developed a different kind of the immune system because of their age which is the real reason of the variable types of tissue rejection but not the age factor itself.