

C11. HLA TESTING FOR THE SELECTION OF A COMPATIBLE HEMATOPOIETIC STEM CELLS DONOR – STRATEGIE, DIFFICULTIES, RESULTS

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Introduction: Stem cells transplantation is one of therapeutic potential curative procedure frequently used in malignant diseases treatment.. One of the most important conditions for a successful hematopoietic grafting is the selection of a HLA matched donor.

Materials and Methods: About 60% of the last 10 years National HLA Laboratory” s activity was dedicated to the selection of donors for patients that needed a hematopoietic stem cells allo-transplantation. The working protocol suffered several changes according to the typing methods available in our laboratory. The present protocol was established according to the Bone Marrow Transplantation Center requirements, in compliance with European Federation of Immunogenetics (EFI) standards for histocompatibility testing. The tests are performed in 2 steps. The first step is to test HLA-A,B,DRB1 alleles of patients together with all available first degree relatives. Only DNA methods, SSP or SSO 2 digits are used. All patient-donor compatible pairs, even those with clearly haplotype segregation, are tested for HLA-A,B,C,DRB1,DQB1 alleles, on new fresh blood samples, using molecular biology 4 digits typing kits. Also, for patients without a suitable family donor, our protocol includes performing a second HLA typing using new fresh blood samples, by molecular biology 4 digits typing methods. The most common difficulties in performing the HLA tests and the selection of a compatible donor were: wrong sapling, leucopenia, unknown exclusion of paternity , crossing-over, rare HLA alleles or haplotypes.

Results and conclusions: Our statistical data for 2008-1012 show that about 120 families have been tested every year, with a significant growth trend in 2013. The tests result” s analyses shoved that about 28% of the patients tested in our laboratory had a potential compatible donor in their family. In the majority of the cases it was a HLA genotypic identical sibling and in 2 of the cases, other relatives such as parents had 100% allelic compatibility. Regarding the selection of an unrelated compatible donor, 35 extended or verification typing requests have been received in our lab – there were 15 romanian donors and 20 foreign donors. Those tests confirmed the HLA compatibility for 21 patients-donors pairs. Between the potential compatible donors selected from Romanian National Registry, 3 donors have been confirmed – 2 for a Romanian patient and 1 for a foreign patient.