Guidelines for the Blood Transfusion Services

17.6: Patient testing

http://transfusionguidelines.org/red-book/chapter-17-granulocyte-immunology/17-6-patient-testing

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17.6.1: HNA typing

Patients should be typed for HNA following the guidelines for donor HNA typing. A provisional type can be issued on the basis of a phenotype/genotype performed on one occasion. However, it is recommended that, if possible, a second typing technique be used on the first occasion of testing, especially where quality exercises or routine practice have revealed technical problems in typing for particular polymorphisms.

17.6.2: Investigation of HNA antibodies

Patients should be investigated for HNA antibodies following the guidelines for donor investigation. The investigation of neonatal alloimmune neutropenia (NAIN) should include HNA typing of the parents and affected baby(ies) as this will help identify any potential HNA incompatibilities and can be used to direct antibody screening if the father and baby both have a low frequency HNA that is absent in the mother. Cases with a clinical diagnosis of possible NAIN and a negative HNA antibody screen against common HNA should be investigated for the presence of antibodies against low-frequency or ‘private’ antigens. An effective approach is to use granulocytes from the child’s father as an additional panel cell (paternal granulocytes should be HNA typed as a ‘patient sample’). Alternatively, laboratories may refer such cases to a reference laboratory.

In the investigation of TRALI, implicated donor samples should be investigated for the presence of both HNA and HLA Class I and Class II antibodies (see also section 16.6). There is usually no requirement to investigate the patient’s serum for HNA or HLA antibodies, but if this is necessary both pre- and post-transfusion samples (where available) should be investigated. Where antibody specificities are identified, the donor and patient should be typed to determine the presence or absence of the cognate antigen. If required, a crossmatch may be performed between the implicated donor serum samples and granulocytes /lymphocytes from the patient to determine the clinical relevance of any antibodies and the presence of any low-frequency antibodies. When ‘pooled’ platelet products are implicated in a case of TRALI, consideration should also be given to the possibility of the formation of inter-donor immune complexes. In such cases, all the donors who contributed to the pool should also be HNA and HLA typed. In a small proportion of TRALI cases, patient antibodies may react with infused donor cells/antigens and it may be necessary to incubate the patient’s serum with granulocytes/lymphocytes from the donor.

Crossmatch studies in both suspected NAIN and TRALI cases require that the granulocytes/lymphocytes are isolated from the patient’s blood samples within 24 hours of venesection.

A patient or donor with HNA alloantibodies should receive an HNA antibody card and an information leaflet wherever this is available.

17.6.3: Controls for direct tests for granulocyte bound immunoglobulins

Anticoagulated blood samples, less than 24 hours old, from a sufficient number of different normal donors to give a statistically valid normal range, should be used as control samples for the determination of granulocyte-bound immunoglobulins.