ANTIBODIES AGAINST CARBOHYDRATE TARGETS ON GPIB/V/IX COMPLEX IN THROMBOCYTOPENIC PATIENTS AS DETECTED BY MAIPA (2000) ISBT Abstract Nr. P063

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In general, transfusion of bloodgroup A platelets in patients with bloodgroup 0 is as effective as of platelets of bloodgroup 0. Indeed platelets express only a small number of Bloodgroup A- epitopes. However in a small fraction of patients transfusion problems due to blood group incompatibility arise. Moreover there exists a clinically distinguishable mild course of NAIT being caused by maternal IgG-anti A- antibodies. Apparently, it is not the normal isoagglutinins that attack corresponding platelets but antibodies of bloodgroup A dependent platelet specificity.
Therefore, we have constructed antibody screening and antibody differentiation panels including not only different HPA- systems but also different carbohydrate antigens known to be present on the glycoprotein complex Ib/V/IX on platelets. Moreover the MAIPA technique was adapted to detect not only IgG but also IgM antibodies bound to this glycoprotein complex. With these panels we investigated 451 consecutive patients with thrombocytopenia of suspected immune etiology. Free antibodies against epitopes of this glycoprotein complex were shown in 126 cases (27,9 %). Typical autoantibodies with specificity against the whole glycoprotein complex were shown in 93 cases (20,6%), only 2 patients suffered from formation of HPA 2b specific IgG- alloantibodies, while 30 (6,7%) patients had IgG and/or IgM alloantibodies reacting specifically to bloodgroup A substance on the glycoprotein complex Ib/V/IX, 3 patients of this group carried such IgG and IgM alloantibodies at the same time. Only one patient´s IgM and IgG alloantibodies were directed against the P1 antigen on glycoprotein complex Ib/V/IX, and none of the patients presented with IgG- or IgM antibodies against Le(a) and /or Le(b) antigens on this glycoprotein complex.
We conclude that there is a small percentage of about 10 - 15 % of blood group 0 patients which carry antibodies specific for carbohydrate antigens on glycoprotein complex Ib/V/IX. These patients may profit from a platelet transfusion regime avoiding bloodgroup A. These relevant antibodies are about 15 times more frequent than HPA specific alloantibodies and may also play a role in mild courses of neonatal alloimmune thrombocytopenia.