Anti-CD36 in The Desert

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BACKGROUND

Fetal/neonatal alloimmune thrombocytopenia (FNAIT) due to iso-antibodies directed against CD36 (platelet GPIV) is frequent in the Asian population but is relatively rare in Caucasians (<0.4%). Although its frequency in the Mediterranean area has never been determined, it is thought to be higher than in Europe.

The clinical picture in children born to mothers with anti-CD36 is heterogeneous, varying between widespread petechial haemorrhages, gastrointestinal bleeding, severe anaemia, , thrombocytopenia and hydrops fetalis.

The Platelet Immunology Laboratory at the Rambam Health Care Campus is the Israeli reference laboratory and a member in the International Platelet Working Party. Since the introduction of tests for the presence of anti-CD36 antibodies in the laboratory during 2018, we have diagnosed 7 cases of FNAIT mediated by anti-CD36 antibodies, with neonatal platelet counts ranging from 98000/ul to 15000/ul. In two cases thrombocytopenia was accompanied with severe anemia. All mothers were negative to the CD36 antigen both on their platelets and monocytes.

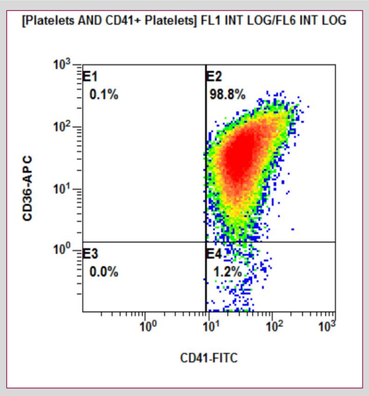
Case report

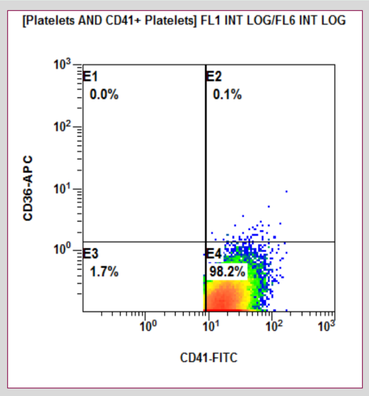
a 22-year old mother from a Bedouin tribe in the Negev desert in Southern Israel. The Bedouins originate from the Arabian Peninsula. Her first pregnancy was terminated after hydrops fetalis at 28 week of gestation. In the second pregnancy, there were once again signs of severe anemia and hydrops and despite treatment with 2 intrauterine transfusions of red blood cells the newborn suffered from severe anemia and thrombocytopenia and died one day after birth. The family was referred to our laboratory when the mother was at week 19 of her subsequent (third) pregnancy. An anti CD36 antibody was diagnosed and confirmed at the Platelet Reference Laboratory in Tokyo. No other antibodies against platelets or red cells were found.

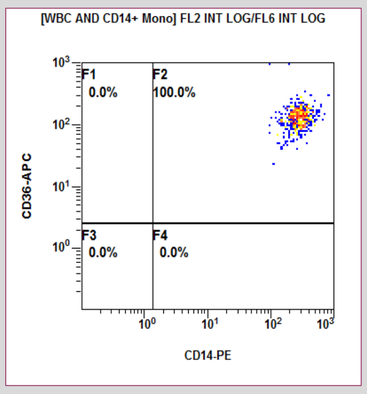
The mother was treated weekly with IVIG and steroids from 20th week of gestation. A baby boy was born in CS at 34th week with anemia and thrombocytopenia of 47000 platelets/ul, but normalized after treatment with IVIG and platelet transfusion.

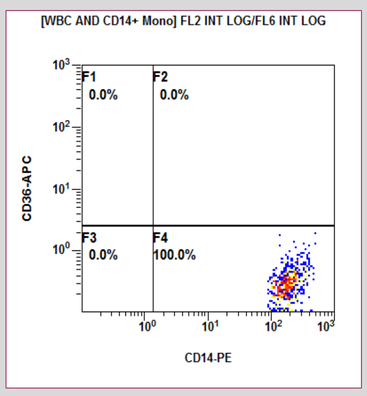
CD36 phenotyping of other members of the mother's family (two sisters, one brother and the parents) was positive

Father	Mother	Father	Mother









CD36 Phenotype on Platelets

CD36 Phenotype on Monocytes

CONCLUSIONS

In cases of combined fetal anemia and thrombocytopenia, anti-CD36 should be ruled out.