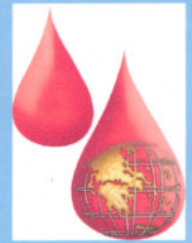


DETECTION OF CW ANTIGEN OF THE RHESUS BLOOD SYSTEM IN GREEK BLOOD DONORS WITH A NOVEL METHOD FOR SIMULTANEOUS TYPING OF ABO, D, RHESUS SUBGROUPS AND K ("MDmulticard")



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AIM:

The CW antigen is a rare antigen of the Rhesus blood system which is associated with a point mutation in the RHCE gene. An A122G transition results in a Gln41Arg amino acid substitution in the first extracellular loop of the Rh polypeptide.

The frequency of CW in populations of general white extraction is about 2%, with the exception of Finns, wherein the frequency is about 4%. The antigen has been implicated in alloimmunization after transfusion and in Hemolytic Disease of Newborn (HDN).

The aim of the study was the detection of CW in Greek blood donors and the comparison of its frequency with that of Caucasians.

MATERIALS AND METHODS:

500 blood donors, randomly selected, were studied between 30/05/07 and 02/08/07.

For the detection of CW, a novel lateral flow assay for simultaneous typing of ABO, D, Rhesus antigens (C, CW, c, E, e) and Kell (MD MULTICARD – MEDION DIAGNOSTICS) was used. EDTA whole blood and coagulated blood were used for testing each sample.

On a CW positive result, samples were also tested with a gel agglutination assay (ID-System, Diamed).

RESULTS:

478 out of 500 donors were of Greek origin.

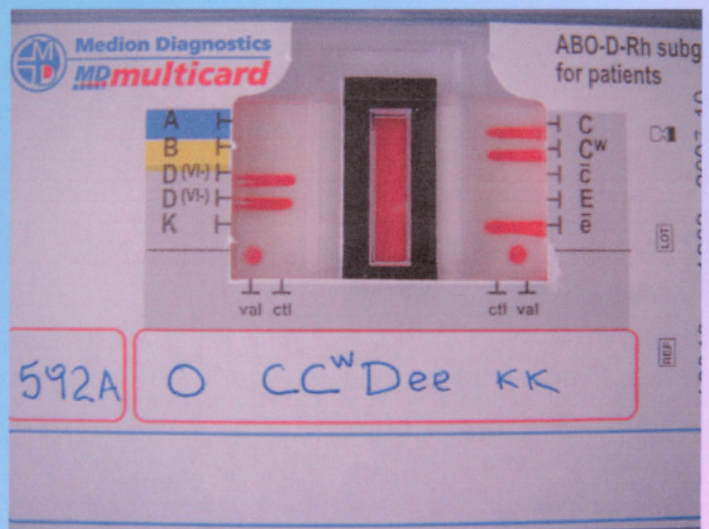
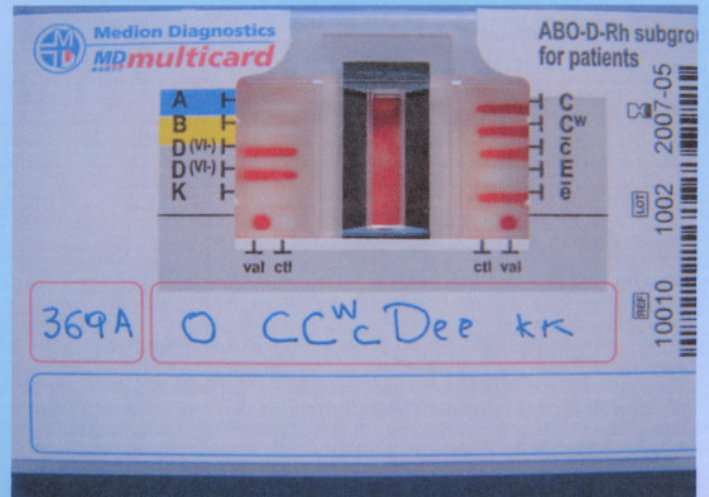
7 samples were CW (+), a frequency of 1,46%.

5 samples had the DCCW genotype while the other 2 samples had the DCCWc genotype.

There were no discrepancies between MDmulticard and Diamed results or between the anticoagulated and the coagulated blood sample of the same donor.

References:

1. Mollison's: Blood Transfusion in Clinical Medicine (ed 11). Blackwell, 2005
2. Mouro I et al. Molecular basis of the RhCw (Rh8) and RhCx (Rh9) blood group specificities. Blood. 1995;86: 1196-1201 32



CONCLUSION:

The preliminary results showed a CW frequency similar to the one that occur in the Caucasians (<2%). Testing of more samples is underway to verify this observation.