The aim of this study is to evaluate antibody screening and the sensitivity of detection of irregular red blood cell antibodies in pregnant women on the Galileo® automated instrument in our center.

Materials and methods

85 samples of pregnant women were analysed. The Capture-R (4 cell) technology used on the Galileo® for screening was compared with the gel test method performed routinely and manually in our lab (Liss Coombs gel, DIAMED®).

To evaluate the sensitivity of detection of anti-RH1 we used 6 dilutions of the NISBIC (National Institute for Biological Standards and Control) anti-RH1 standard: from 0.75 ng/ml to 24 ng/ml.

Results

1. For the 50 negative samples tested we found 50 negative results with Galileo®.

2. 14 specificities of allo-antibodies were tested : anti-RH3, anti-RH4, anti-RH5, anti-RH8, anti-KEL1, anti-KEL3, anti-FY1, anti-JK1, anti-MNS1, anti-MNS3, anti-MNS4, anti-MNS5, anti-LU1, anti-LU2.

Galileo® detected 30 of the 35 positive samples and the 5 antibodies not detected were: 2 anti-RH8, 3 anti-MNS1.

3. Another assay was performed to test positive results samples with serial dilution of sera (in albumin medium). Dilutions were chosen in function of initial antibody titer.

We observed a better sensitivity with the Capture-R Immucor® Technology than with the gel test method for all antibodies detected by Galileo®, except for 2 antibodies (1 Anti-RH1, 1 Anti-LU1).

4. The sensitivity of detection of anti-RH1 was found between 0.75 and 1.5 ng/ml for Galileo (versus 6 ng/ml for gel test method).

Conclusion

Galileo® offers a high sensitivity for the 14 specificities of antibodies tested during this evaluation to monitor clinically significant antibodies in pregnant women. The Capture-R (4 cell) screening method is a satisfactory technology with a better sensitivity for anti-RH1 detection than the gel method. Furthermore, the 5 antibodies not detected (2 anti-RH8 and 3 anti-MNS1) were IgM antibodies which cannot cross the placenta and therefore would not be the cause of HDFN.