

Interpretation of the ADCC-test result

ADCC and clinical significance

<u>ADCC %</u>	<u>Expected hemolysis newborn</u>
0 – 10	no
10 – 30	no to mild/moderate
30 – 50	moderate to severe
50 – higher	severe to very severe

Explanation of the ADCC-test

With the ADCC-test (antibody dependent cell-mediated cytotoxicity test) monocyte/macrophage mediated destruction of IgG opsonized red blood cells is measured in vitro. It has been shown that especially for anti-D antibodies, the percentage of red cell destruction in vitro correlates well with the severity of hemolysis in vivo. For antibodies other than RhD, the correlation between ADCC percentage and hemolysis is less strong and the antibody titer is a more informative predictor of hemolysis

Advice

With an ADCC-test result of <10% it is advised to repeat the test every 2 weeks (after 32 weeks gestation). Amniocentesis is not indicated. Before 32 weeks gestation it is sufficient to repeat the test every 4 weeks.

With an ADCC-test result of >10% we strongly recommend that the patient is seen by a gynecologist. As for the follow-up of the ADCC test, the same advice as above applies. A result higher than 50% should be interpreted as a great potential danger for the child and mother should be referred to specialized center where treatment with intra-uterine transfusions is possible.

False positive results may occur due to the following:

- The father is heterozygous for the D-antigen and the fetus is RhD negative.
- The activity of the monocytes/macrophages of the fetus is decreased due to maternal inhibitory antibodies. The fetal erythrocytes are sensitized with antibodies but direct hemolysis does not occur due to inhibition of monocyte function by the antibodies. However, a delayed hemolysis can occur up to 3 months post-partum.
- The passage of IgG through the placenta can be blocked

Note:

In cases of antibody specificities other than anti-D, the correlation between severity of hemolysis and the percentage is based upon the evaluation of a much smaller number of cases than in the event of a RhD-immunisation. The predictive value of the ADCC-test in this case may therefore be lower.