

## DETERMINATION OF RUBELLA IgM ANTIBODIES BY SOLID-PHASE IMMUNOSORBENT TECHNIQUE

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The presence of rubella-specific immunoglobulin M (IgM) antibodies in serum is a reliable indicator of recent rubella virus infection. The determination of the latter is needed first of all in suspected infections during pregnancy to prevent congenital rubella syndrome. Several techniques have been reported for the demonstration of rubella-specific IgM, but most of them are not suitable for routine diagnosis. Recently, a solid-phase immunosorbent technique (SPIT) for the detection of rubella IgM using the haemagglutination inhibition (HI) test was developed (1). Its sensitivity is comparable with the commonly used density gradient technique, but it is easily performed and requires no special laboratory equipment and does not limit the number of patients' sera tested per day. In the SPIT, IgM antibodies from human sera are adsorbed on to anti-human IgM-coated wells in microtiter plates and rubella-specific IgM antibodies are determined by the standard HI test. The SPIT used in our laboratory is similar to that described (1), but we have slightly modified the test conditions; we used rabbit antiserum to human IgM  $\mu$  chain (Behringwerke AG, Mannheim, F.R.G.) and 1-day-old chicken erythrocytes instead of sheep erythrocytes.

A total of 229 sera were tested in this study. They included a) 53 paired serum specimens from patients with the diagnosis of acute rubella; b) 93 single sera from newborns; and c) 30 single sera with high HI antibody titres taken from persons more than 8 months after rubella infection.

Among 53 patients with clinical rubella the diagnosis was confirmed in 46 cases by HI or complement fixation (CF) or both tests (seroconversion or a fourfold rise in antibody titre). In serum samples taken 1 to 4 weeks after the rash, rubella-specific IgM antibodies were demonstrated in 44 persons. Rubella-specific IgM antibodies were demonstrated in 2 of 7 persons without seroconversion or significant rise of antibody titres in HI and CF tests, but with high antibody levels. Rubella HI antibodies were found in 83 of 93 "potentially risk" cord blood sera; the rubella-specific IgM antibodies were detected in 1 serum. Specific IgM antibodies were not detected in any serum taken from persons with prior rubella infection (group c).

Despite some questionable results requiring a detailed analysis, we regard SPIT (or its modifications) very suitable for routine diagnosis of recent rubella or congenital rubella syndrome. This opinion was recently confirmed also by other authors (2).

## References

1. Krech, U., and Wilhelm, J. A., *J. gen. Virol.* 44: 281, 1979.
2. Logt, J. T. M. van der, Loom, A. M. van, Veen, J. van der, *J. clin. Microbiol.* 13, 410, 1981.