Evaluation of IgG Antibody Titer Against Rubella Virus in the First Trimester Pregnant Women in Selected Centers of Tehran

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Background & Objectives: Rubella is a viral disease with manifestations of fever, skin rashes and lymphadenopathy. The highest prevalence of rubella is among 5 to 9 years old children and in the spring. Rubella infection of pregnant mothers during first 20 weeks of pregnancy can be caused congenital rubella syndrome that associates with complications like intrauterine death, spotaneous abortion and organ abnormalities in fetus.The aim of this study is to evaluate the immunity of first trimester pregnant women against this virus.

Methods: In this Cross-Sectional study, 120 first trimester pregnant women referred to the obstetrics clinic of Hazrat-e-Zeinab Hospital, Mostafa Khomeini Hospital andJjalali Health Center in Tehran city have been studied. 2-3 cc of venous blood was collected from each person and antibody titer was measured by ELISA methods. Titers more than 15IU/ml were considered to be protective. Statistical analysis was performed using χ^2 and Pearson statistical tests.

Results: In reviewing the study population with average age of 28.7 years, the immunity rate to rubella virus was 91.6% (110 person) and the susceptibility rate to rubella virus was 8.4% (10 person). The highest positive titer was observed in that group with a history of rubella vaccination (91.6%). there was a statistically significant correlation between the antibody titer and a history of abortion (P=0.001), this means that in the group without a history of abortion, the titer rate was higher. Other variables such as parity and history of genital infections also show a statistically significant correlation with the antibody titer. (P=0.026).

Conclusion: In this study it was observed that the antibody titer in subjects proportionally decreases with increasing parity, previous abortions and maternal history of genital infection. So it is recommended that in susceptible individuals, before pregnancy we study their history of infection or vaccinate them to have adequate immunity during pregnancy.

Keywords: Rubella Virus; IgG; First Trimester; Pregnant Women; Congenital Rubella Syndrome