RUBELLA — A PREVALENCE STUDY IN PREGNANCY WITH BAD OBSTETRIC HISTORY

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SUMMARY

A pilot study was undertaken to find out prevalence of TORCH group of infections in pregnant mothers with bad obstetric history. In a preliminary study 176 sera from BOH mothers attending antenatal clinic of Sassoon General Hospitals, Pune were tested for presence of antibodies to rubella by SRH technique, Prevalence was 13.7%.

Introduction

In recent past there has been a revival of interest in epidemiology of TORCH group of infections due to its association with congenital malformations and pregnancy wastage. Unlike measles the diagnosis of Rubella is very often missed as the infection is mild and rash and lymphadenopathy are transient. Serodiagnosis is therefore the only reliable way to study prevalence patterns which are necessary for formulation of health/immunisation policy. Considering the likely better yield it was decided that a pilot study to establish infection in local community be based on pregnant women with past bad obstetric outcome.

Material and Methods

Study was conducted in Sassoon General Hospitals, Pune during 1986-87. Study sample consisted of 176 pregnant mothers attending hospital antenatal clinic who gave history of abortions/preterm deliveries/still births without recognisable gynaecological defects.

Five ml. blood was collected aseptically from each mother after recording relevant information/history in a pretested form. Separated sera were stored at -20°C till tested. Serodiagnosis was established by using single radial haemolysis (SRH) test as recommended by Russell S.M. (1978) and Kurtz J.B. (1980) with few modifications. Sheep blood was collected in Alserver's solution. Cells were washed thrice with veronal buffer saline (VBS). 20% sheep cell suspensation in VBS was treated with rubella SRH antigen (Wellcome Research Laboratories) for 30 minutes and cells were resuspended in VBS containing gentamycin. These alongwith complement were added to 1% agarose in VBS at 50°C and well mixed. Mixture was poured immediately over the

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levelled slide to get a layer of 1mm thickness. Wells of 2mm diameter were dug after agar was cooled and set.

Test sera (inactivated at 56°C) and positive and negative controls were added to the wells and the slide was incubated overnight at 37°C in a moist chamber. Strict aseptic procedure/technique was used.

Results were read after 18-20 hours. Sera showing zone of haemolysis equal to or more than that of positive control were considered positive while the ones showing no haemolysis or a zone smaller than the control were marked as negative.

Results and Discussion

SRH test is intended for detection of IgG antibodies to rubella virus indicating infection (past or present) and is of no use of IgM detection in acute infections like HAI test. However it provides an useful tool for seroepidemiological surveys.

Prevalence: Only 23/176 (13.7%) samples showed antibodies to rubella denoting exposure to virus in the past. It also meant that all remaining mothers 153/176 (86.93%) having no protective antibody levels were still susceptible to infection in future pregnancies and were at rist of delivering a child with congenital abnormality. Prevalence of antibody pattern is quite different from measles which is almost an universal disease, mainly of childhood and almost all women have circulating antibodies before they reach childbearing age.

Further scrutiny of data was done by adopting case control study technique for analysing possible differences between seropositives and seronegatives. Age distribution, socio-economic status, occupation, number of mishaps in the past, number of living children, history of measles like illness and many other similar factors were identical in both the groups and seropositivity could not be correlated to bad obstetric history.

Same sera were simultaneously tested for toxoplasma antibodies by Indirect Haemagglutination Test (IHA). Toxoplasma antibody prevalence was 33/176 - 18.75%. However no correlation was seen even in a single factor between two members of Torch infections. Present study thus established the prevalence of rubella in Pune city though further indepth studies are indicated to clarify the epidemiology of disease, specially the agewise seroconversion rates in females which would decide the immunization policy.

References

1. *Kurtz, J.B.: J. Hyg. Camb. 84:213-221, 1980.*
2. *Russell, S.M.: J. Clin. Path. 31:521-526, 1978.*