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Impact of Rubella on Pregnancy with Respect to IgM Immunolobulin

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Abstract: **Rubella, though a mild skin infection but show disastrous effects during pregnancy and causes damage to fetus. The disease is vaccine- preventable diseases can manifest with severe teratogenic effects in fetus known as congenital rubella syndrome (CRS) due to primary maternal infection such as heart disorders, blindness, deafness or other life threatening organ disorders. During pregnancy, explore to disease can lead to disastrous results such as bad obstetric history (BOH), repeated pregnancy loss (RPL) or may cause deformities in fetuses whereas it also responsible for infertility and maternal mortality. In the study162 women of different background were selected, out of them 27.16 % of them were found seronegative and were at risk to have Rubella infection. In the study, the pregnant women show variation in immunity for Rubella according to age. The highest number of susceptible women was found in age group 21-25 year which is crucial age of conceiving.**

Keywords**: Teratogenic, Deformities, Seronegative, Immunity, Susceptible.**

1. INTRODUCTION

Rubella infection is normally of minor impact characterized by a mild, self-limited disease associated with a characteristic rash. The incubation period for rubella is 12 to 23 days. The infectious period is from 7 days before to 5–7 days after rash onset. In the absence of pregnancy, it is usually clinically manifested as a mild self-limited infection. But during pregnancy, however, the virus can have potentially devastating effects on the developing fetus. It has been directly responsible for inestimable wastage and for severe congenital malformations. Rubella disease generally has two symptoms, primary or mild effect and secondary, i.e. CRS (Congenital Rubella Syndrome). While in about 50% of the cases the infection is silent, but the individual still has the potential to transmit the disease. Generally, the disease manifests itself with mild symptoms such as fever, rashes, respiratory disorder, joint pain, swollen glands, headache, conjunctivitis etc., which rarely causes complication in some cases such as arthritis or encephalitis.

Secondary effect (Plotkin, 2001) of the disease is the disastrous one which follows the intrauterine infection by the Rubella virus and comprises of malformation and complication in the fetus and also shows a bad obstetric history (BOH), repeated pregnancy loss (RPL) in women whereas it is also responsible for maternal mortality. This is generally caused due to maternal infection during pregnancy. Due to this fetal infection prematurity, low birth weight and neonatal thrombocytopenia, anemia and hepatitis can occur. The risk of major defect organogenesis (deformation of organs) is highest from infection in the first trimester. Mothers who infected by Rubella within the first trimester either have a miscarriage or a stillborn baby. Even if the baby survives it can be born with severe heart disorders, blindness, deafness or other life threatening organ disorders. The skin manifestations are called “Blue Berry Muffin Lesions”.

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2. METHODOLOGY

Study was concerned with the effect of rubella on pregnant women and fetus. Serums of 162 women of age group 16-40 yrs were studied on the basis of rubella immunity (IgM immunoglobulin). A detail obstetric history was taken from these women with respect to age and obstetric history. All women were grouped as 16-20yrs, 21-25yrs, 26-30yrs, 31-35yrs and 36-40yrs. In study susceptibility percentage of individual group was calculated for IgM immunoglobulin by ELISA test.

3. RESULTS

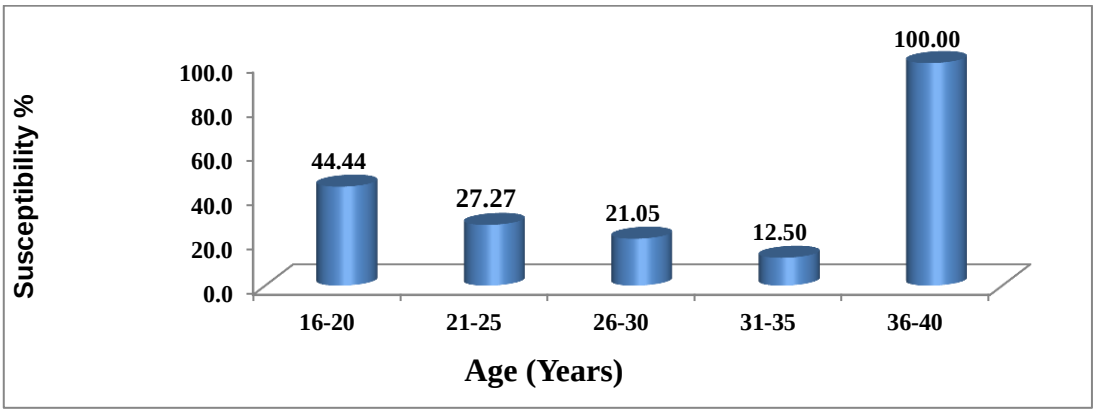

Figure 1: Number of Susceptible pregnant women according to age groups. (N=162).

S. No.	Age (Yrs)	N	No. of susceptible	Susceptibility %
1	16-20	18	8	44.44
2	21-25	88	24	27.27
3	26-30	38	8	21.05
4	31-35	16	2	12.50
5	36-40	2	2	100
Total	16-40	162	44	27.16%

Figure 2: Susceptibility percentage of pregnant women, according to age groups. (N=162)

In study 162 pregnant women were found out of which 27.16% women were found susceptible to rubella (72.84% immunity). Table-1 shows that the highest percentage (100%) of susceptibility within the groups was found in the age group 36-40yrs whereas age group 31-35yrs shows the lowest percentage of susceptibility. [Figure-2]

4. DISCUSSION

The majority of women were at high risk at first trimester. In this condition Rubella causes maximum damage to the fetus and mother. It was found that, in newly married couple's majorities of woman's face problem in their first trimester pregnancy or in conceiving. The studies of Gandhoke et al. (1988-2002), Gupta et al. (2003-2004), and Padmaja et al. (2003-2006) shows 14.6%, 12.8% and 34.3% susceptibility respectively in pregnant women.

In study preference was given to all those women, complaining above problems and it was observed that, women suffering from primary or secondary infertility and infertility with bad obstetric history shows the highest percentage of susceptibility.

Pregnant women in the present study show variation in Rubella susceptibility according to different age groups. In study 162 pregnant women were studied and susceptibility against rubella in age groups 16-20years, 21-25years, 26-30years, 31-35years, 36-40years was 44.44%, 27.27%, 21.05%, 12.50% and 100% respectively[figure-1]. Similarly Rubella susceptibility among different age-groups of pregnant women from Delhi (Seth et al 1972) were reported as 15-19years, 20-24years, 25-29years and 30-34years was 7.1%, 11.6%, 15.5% and 15.4% respectively. Also from the same state by

Gupta et al (2006) susceptibility in pregnant women of age groups 15-19years, 20-24years, 25-30ears, and >31years was reported as 7.5%, 10.5%, 13% and 22.5% respectively (for IgG antibody).

5. CONCLUSION

Rubella has become global problem and spreading its arms continuously within developing countries. Disease was term as mild self limiting skin disease. Its impacts can be easily seen in all age groups as well as on future generation.

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