

Seroprevalance of Rubella Antibodies among women of Reproductive Age: A Study at Nishtar Hospital Multan

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Objective: This study was conducted to determine the seroprevalance of rubella antibodies among women of reproductive age and to emphasize the importance of vaccinating this population. **Material and methods:** Serum specimen of 180 students of College of Nursing Nishtar Hospital Multan was screened with IMMULITE/IMMULITE 1000 Rubella Quantitative IgG assay at MINAR (Multan Institute of Nuclear medicine and Radiotherapy). **Results:** Out of 180 serum specimens screened 168 (93.33%) were seropositive. 9 (5%) were seronegative and 3(1.6%) fell in the intermediate range. All subjects were unmarried, between 16 and 24 years of age and none had a previous history of rubella vaccination. However there was non specific history of fever and rash in 11(6.1%) students. **Conclusion:** It is evident from this small hospital based study that rubella virus infection is prevalent in our population. However women who reach child bearing age without acquiring natural immunity need to be immunized to prevent repeated pregnancy loss and birth of infants with congenital rubella syndrome. (CRS)

Key words: Congenital rubella syndrome, CRS, Rubella Vaccine

Rubella is viral disease with minor morbidity and few complications unless it is contracted by a pregnant woman. During the first trimester of pregnancy it often leads to fetal death of severe congenital defects, Congenital Rubella Syndrome (CRS)¹. The rehabilitation of CRS child is not only expensive and difficult but it also leads to physical, psychological and moral burden for the family, the child and the health care system².

Nearly 50% of CRS can be prevented via vaccination of fertile women, based on the recommendations of the Advisory Committee on Immunization Practice (ACIP)³. In Pakistan rubella vaccination is not a routine vaccine and people can only be vaccinated by reaching out to tertiary or private health centers or through public health education strategies. The purpose of this study was not only to determine the seroprevalance of rubella antibodies among women of reproductive age but also to re-emphasize the importance of vaccinating this population.

Material and methods

Serum specimen of 180 students of College of Nursing Nishtar Hospital Multan was taken after ensuring confidentiality of the results and screened with IMMULITE/IMMULITE 1000 Rubella Quantitative IgG assay at MINAR (Multan Institute of Nuclear medicine and Radiotherapy). Data was entered and analyzed using computer programme SPSS version 12 and Chai square test applied to analyze the results.

Results

Out of 180 serum specimens screened 168 (93.33%) were seropositive, 9 (5%) were seronegative and 3(1.6%) fell in the intermediate range. All subjects were unmarried, and between 16 and 24 years of age. Mean age was 20.4 years

with standard deviation of 2.5. None of them had a previous history of rubella vaccination. However there was a non specific history of fever and rash in 11(6.1%) students.

Discussion

Rubella is generally asymptomatic in healthy adults but when it occurs in pregnant women it leads to congenital rubella syndrome in the fetus so it is an important public health problem⁴. The ideal solution is to search the fertile women for rubella and vaccinate the seronegative cases. There is a considerable variation in the prevalence of rubella antibodies among women of child bearing age. European women have relatively higher prevalence of rubella immunity (93.2%) as compared to women of Asian and African origin (78.4%)⁵. In India the reported figures vary from 53%-94.1% percent^{6,7,8,9}. In our study 93.3% females were seropositive and 5% were seronegative. There was no history of rubella vaccination in any case except a non-specific history of fever and rash in 6.1% cases. This indicates that rubella infection is quite prevalent in our population and it is important to vaccinate seronegative subjects to prevent CRS. Obstetricians should always check rubella serologies in women of reproductive age even if they have been vaccinated. Rubella serology should also be checked in all pregnancies even if the patients were seropositive during their prior pregnancies¹⁰. In Pakistan the prevalence of CRS is not known but since the birth rate is very high, the risk of CRS can be minimized by developing an appropriate vaccination strategy. Moreover the provision of rubella vaccine to both medical and nursing students before they enter the hospital environment would help to prevent hospital based outbreaks and would protect female health personnel before their first pregnancy¹¹

Conclusion

This small hospital based study shows that rubella virus infection is prevalent in our population. However, a substantial number of women including those of medical community reach childbearing age without acquiring natural immunity to Rubella. It is therefore required to formulate an effective Rubella immunization programme to prevent repeated pregnancy wastage and birth of infants with congenital Rubella syndrome.

References

1. Gershon A.A. Rubella virus (German Measles). In Mandegl GL, Bennet JE, Dolin R. Mandell Douglas and Bennet's Principles and practice of infectious disease. Churchill Livingstone Inc. 5th. Ed.2000: 1708-14
2. Turgut H, Sacar S, Toprak S, Asan A. Fertile women are still under risk for having congenital rubella syndrome infants in Denizli / Turkey. The internet journal of infectious diseases 2004; Volume 3, Number 2.
3. Centers for disease control. Control and Prevention of Rubella. Evaluation and management of suspected outbreaks, rubella in pregnant women, and surveillance of congenital rubella syndrome. MMWR 2001:50 (RR-12)
4. Centers for disease control. Measles, mumps and rubella-vaccine use and strategies for elimination of measles, rubella

and congenital rubella syndrome and control of mumps. Recommendations of ACIP.MMWR. 1988:47(RR-8)

5. Lever AML, Ross MGR, Baboonian C, Griffiths PD. Immunity to rubella among women of child bearing age. British J Obstet Gynaecol 1987; 94: 208-12
6. Seth P, Balaya S, Mohapatra LN. Seroepidemiological study of rubella infection in female subjects of Delhi and its Surrounding Villages. Indian J Med Res 971; 59: 190-4.
7. Pal SR. Chitkara NL, Broor S, Murthy JG, Chaudhary S, Devi PK. Serological investigation of rubella virus infection in and around Chandigarh-A preliminary communication. Indian J Med Res 1974; 62: 240-5
8. Bhaskaram p, Ramalakshmi BA, Ramaraju LA, Raman L. Need for protection against rubella in india. Indian J Pediatr 1991; 58: 811-4
9. Chakrabarty MS, Das BC, Gupta B, Sarkar JK. Rubella as an actiological factor for congenital malformation in calcutta: A serological study. Indian J Med Res 1975; 63: 1438-45
10. Marret H, Golfier F, Di Maio M, Champion F, Attia SJ, Raudrant D. Rubella in pregnancy. Management and prevention. Press Med. 1999; 28 :2117-22
11. Vijayalakshmi P, Anuradha R, Prakash K, Narendran K, Ravindran M, Prajna L et al. Rubella Serosurveys at three aravind eye hospitals in tamil nadu, India. Bulletin of WHO 2004; 82 (4).

