

Abstract

Incidence of congenital rubella syndrome / congenital rubella infection and characterization of rubella virus in Sri Lanka

Background:

Rubella infection is a congenitally transmitted infection which can cause severe birth defects. Congenital rubella infection (CRI) when associated with severe defects is defined as congenital rubella syndrome (CRS). CRS was greatly reduced globally, following introduction of rubella vaccination. Confirmation of CRS is done by detecting virus specific IgM antibodies. Virus genotyping provides important epidemiologic information.

Objectives:

To describe the incidence of CRS between 2010-2012 in Sri Lanka

To characterize circulating rubella virus in Sri Lanka by virus isolation, PCR and sequencing

Design, setting and methods:

Serum samples received at MRI between January 2010 to December 2012 from infants suspected with congenital rubella infection, were tested for rubella IgM using a commercial kit. Available clinical history was analysed for clinical features of CRS and immunization history of mother. Virus culture and PCR were performed in nasal and throat swabs from 5 infants. PCR products from three of these were sent to the Regional Reference Laboratory in Thailand for sequencing.

Results:

30/3305 of serum samples tested during this period were positive for rubella IgM. 8 (1037), 4 (907) and 18 (1366) samples were positive in 2010, 2011 and 2012 respectively. 2/5 cases were positive by PCR and virus isolation. 2/3 samples were of genotype 2B. The common congenital defects were congenital heart disease (8/16), hepatomegaly (5/16) IUGR/ low birth weight (4/16), failure to thrive (3/16) corneal opacities, microphthalmia and chorioretinitis (1/16).

Sufficient data on rubella vaccination of mothers was not available.

Year	Number of CRS cases	Incidence of CRS per 100,000 live births
2006	1	0.26
2007	4	1.05
2008	4	1.05
2009	3	0.79
2010	8	2.06
2011	5	1.32
2012	18	4.77

Conclusions: A high incidence of CRI/CRS in Sri Lanka occurred in 2010-2012. The increased number of cases in 2012 could be due to several outbreaks of rubella infection in 2011.

Genotype 2B has been the circulating genotype of rubella virus in the past few years. The present outbreak is not due to a new imported virus.

Recommendation: There should be an uninterrupted, closely monitored vaccination programme to prevent similar episodes.