

Abstract

Rubella virus is a teratogen that may induce foetal death or Congenital Rubella Syndrome (CRS) in the newborn. A baseline sero-survey was carried out in Harare to determine the population susceptible to Rubella virus amongst pregnant women. A descriptive cross-sectional study was carried out on pregnant women between June and July 2012, to establish baseline data on the sero-prevalence of Rubella in pregnant women in Harare. A total of 51 pregnant women at various gestational ages were recruited from Rujeko and Rutsanana antenatal clinics. Also a retrospective analytical study was carried on the laboratory surveillance data of the Zimbabwean Measles/Rubella outbreak of 2009-2011 to assess the age groups affected by Rubella virus infection and Rubella incidence. A 3-5ml blood sample was collected from each consenting subject and serum assayed for Rubella IgG/IgM antibodies by indirect ELISA test. The seroprevalence of Rubella in pregnant women was 92.2%. This study found out that 7.8% of the pregnant women were susceptible to Rubella virus infection in Harare. In this study the seroprevalence of Rubella showed some fluctuations with an increase in age and parity, thus indicating that pregnant women were probably previously exposed to natural Rubella infection since there is no vaccination in Zimbabwe. There were no significant correlations between Rubella infection and age. Although the seronegative rate of Rubella is low, this study suggests the need for detection and vaccination of seronegative women of child bearing age. I concluded that Rubella virus immunity is still >80% in Zimbabwe as stated by the WHO Rubella virus antibody survey.

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List of Abbreviations

µg	microgram
µl	microliter
aa	amino acid (s)
BSC	biological safety cabinet
CDC	Centres for Disease Control and Prevention, Atlanta USA
cDNA	complementary DNA
CO ₂	carbon dioxide
CPE	cytopathic effect
CRS	congenital rubella syndrome
DNA	deoxyribonucleic acid
DMEM	Dulbecco's Minimal Essential Medium
DMSO	dimethyl sulfoxide
EIA	enzyme immunoassay
ELISA	enzyme linked immunosorbent assay
EPI	Expanded Programme on Immunisation
FBS	foetal bovine serum
G	relative centrifugal force
g	gram
IgG	Immunoglobulin class G
IgM	immunoglobulin class M
MEM	minimal essential medium
mg	milligram
ml	millilitre
MM	maintenance medium
Nsp	non-structural protein

OD	optical density
PFU	plaque forming unit
PBS	phosphate buffered saline
RF	rheumatoid factor
RNA	ribonucleic acid
RNase	ribonuclease
RPM	revolutions per minute
RRL	Regional Reference Laboratory
RT	reverse transcription
RT-PCR	reverse transcription- polymerase chain reaction
SLAM	signalling lymphocyte- activation molecule; also known as CDw150
SOP	Standard Operating Procedure
TMB	3, 3' 5, 5'- tetramethylbenzidine
VTM	Viral transport medium
WHO	World Health Organisation
wt	wild type