

RUBELLA, ACUTE AND CONGENITAL

(German measles)

REPORTING INFORMATION

- Acute: [Class A\(1\)](#) - report suspected and confirmed cases immediately by telephone
- Congenital: Class A(2) - report by the end of the next business day by [Confidential Case Report Card](#) (3812.11, rev. 12/81), [lab report](#) (3833.11) or telephone
- Requires completion of the [Rubella Surveillance Worksheet](#) (RUB 5-6). To be sent by the local health department to the ODH - Immunization Unit, 35 E. Chestnut, PO Box 118, Columbus, OH 43266-0118.

AGENT

Rubella virus (Family *Togaviridae*; genus *Rubivirus*)

CASE DEFINITIONS

Rubella [acute]

Clinical case definition

An illness that has all the following characteristics:

- acute onset of generalized maculopapular rash
- temperature $>99^{\circ}\text{F}$ ($>37.2^{\circ}\text{C}$), if measured
- arthralgia/arthritis, lymphadenopathy, or conjunctivitis

Laboratory criteria for diagnosis

- isolation of rubella virus, or
- significant rise between acute- and convalescent-phase titers in serum rubella immunoglobulin G antibody level by any standard serologic assay, or
- positive serologic test for rubella immunoglobulin M (IgM) antibody

Case classification

Suspect: any generalized rash illness of acute onset.

Probable: a case that meets the clinical case definition, has no or noncontributory serologic or virologic testing, and is not epidemiologically linked to a laboratory-confirmed case

Confirmed: a case that is laboratory confirmed or that meets the clinical case definition and is epidemiologically linked to a laboratory-confirmed case

Comments

Serum rubella IgM test results that are false positives have been reported in persons with other viral infections (e.g., acute infection with Epstein-Barr virus [infectious mononucleosis], recent cytomegalovirus infection, and parvovirus infection) or in the presence of rheumatoid factor. Patients who have laboratory evidence of recent measles infection are excluded

Congenital Rubella Syndrome

Clinical description

An illness usually manifesting in infancy resulting from rubella infection in utero, and characterized by signs or symptoms from the following categories:

- (A) Cataracts/congenital glaucoma, congenital heart disease (most commonly patent ductus arteriosus, or peripheral pulmonary artery stenosis), loss of hearing, pigmentary retinopathy.
- (B) Purpura, splenomegaly, jaundice, microcephaly, mental retardation, meningoencephalitis, radiolucent bone disease.

Clinical case definition

Presence of any defects or laboratory data consistent with congenital rubella infection.

Laboratory criteria for diagnosis

- Isolation of rubella virus, or
- Demonstration of rubella-specific IgM antibody, or
- Infant rubella antibody level that persists at a higher level and for a longer period than expected from passive transfer of maternal antibody (i.e., rubella titer in the infant which does not drop at the expected rate of a two-fold dilution per month)

Case classification

Suspected: a case with some compatible clinical findings but not meeting the criteria for a probable case.

Probable: a case that is not laboratory confirmed, and that has any two complications listed in paragraph (A) of the clinical description or one complication from paragraph (A) and one from paragraph(B), and lacks evidence of any other etiology

Confirmed: A clinically compatible case that is laboratory confirmed.

Infection only: a case that demonstrates laboratory evidence of infection, but without any clinical symptoms or signs

Comment

In probable cases, either or both of the eye-related findings (i.e., cataracts and congenital glaucoma) are interpreted as a single complication. In cases classified as infection only, if any compatible signs or symptoms (e.g., hearing loss) are identified later, the case is reclassified as confirmed.

SIGNS AND SYMPTOMS

Postnatally Acquired (acute)

An erythematous maculopapular rash occurs in 50%-80% of those infected. In children the first sign of the disease is a rash. In adolescents and adults the rash is preceded by a 1-5 day prodromal period consisting of a low grade fever, headache, malaise, anorexia, mild conjunctivitis, coryza, sore throat, cough and lymphadenopathy. These symptoms rapidly subside after the appearance of the rash. The fine, pink, macular rash begins on the head at the hair line, spreads to the trunk and limbs, and fades after 48 hours. The rash is occasionally itchy, fainter than measles rash, and does not coalesce.

Congenital Rubella Syndrome (CRS)

The occurrence of rubella during the first trimester of pregnancy has been associated with an increased incidence of congenital malformations, stillbirths, and abortions. Some of these malformations include growth retardation, eye defects such as cataracts and glaucoma, deafness, cardiac defects, central nervous system defects, jaundice, bone lesions and others. While many cases will be immediately recognizable at birth, some might not be detected for months or years.

DIAGNOSIS

The EIA test is the most practical test to utilize. For immune status testing a single serum value of 0.14 is considered negative and 0.17 is considered positive. Values of 0.15 and 0.16 are equivocal and require a second serum evaluation. For diagnosing an acute illness a diagnostic ratio between paired sera of 1.47 is considered significant.

EPIDEMIOLOGY

Source

Humans are the only reservoir.

Occurrence

Worldwide; most prevalent in winter and spring. Prior to the vaccine era, peaks of incidence occurred at six to nine year intervals in the United States.

Mode of Transmission

Person-to-person via droplets shed from the respiratory secretions of infected persons.

Period of Communicability

Highly communicable; the period of maximum communicability is from one week before, to one week after onset of the rash. Infants born with CRS are infectious for many months - in some cases up to a year. Infection generally confers lifelong immunity.

Incubation Period

From 12 to 23 days; usually 16 to 18 days.

PUBLIC HEALTH MANAGEMENT**Case**

There is no specific therapy for the disease.

Isolation

Isolation is useful to protect susceptible pregnant women. The Ohio Administrative Code (OAC [3701-3-13 \[U\]](#)) states that "a person with rubella shall be isolated, including exclusion from school or child care center, for seven days after onset of the rash. Persons with congenital rubella shall be isolated until they are one year old unless nasopharyngeal and urine cultures after three months of age are repeatedly negative for rubella."

Contact

Immunization after exposure will not necessarily prevent infection or illness resulting from that exposure, but might protect against any subsequent exposure and is therefore recommended. Passive immunization with immune globulin will not prevent the disease and is not indicated.

Prevention and Control

Immunization with rubella vaccine is the most effective control measure. Vaccine is particularly recommended for susceptible women in the immediate postpartum period and to teachers, nurses, doctors, and other staff likely to come in contact with individuals with rubella or with prenatal patients. See the ODH manual for ACIP recommended schedule.