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A REVIEW ON GOVER RUBELLA DISEASE

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ABSTRACT

Rubella is an illness caused by the virus RuV. It causes a rash ,low fever & other symptoms Its highly contagious person to person. Rubella is also called German measles or three day measles causes a rash like measles. rubella happen because of a different virus than measles. Rubella's prominent symptom is a rash that usually starts on your face & moues down the rest of your body. They have many symptoms rash, low fever, cough, sore throat, runny nose headache, pink eye, joint pain. There is no any specific treatment for Gover –Rubella. It usually gets better on it's own. Diagnosis, self-care, are used in the treatment.

The best way prevent rubella is vaccination with the MMR vaccine. In treatment of rubella virus self-care play important role. In selfcare medication and get quantile for 10-15 days are effective. The measles mumps rubella vaccine are used in the treatment of rubella virus.

KEYWORDS : *RUV-Rubella Virus; MMR-Measles Mumps Rubella; CRS- Congenital Rubella*

INTRODUCTION

The disease was described by two German physician De Bergen in 1752 and Or low in 1758. The term Rubella was coined by Henry Veale, he is a Scottish physician in 1866. The word rubella is derived from the Latin word rubella meaning reddish or little red. Rubella is a viral illness that spreads from person to person by respiratory secretion. Rubella is a mild, self-limiting rubella-containing vaccine is recommended for children at 12 months of age. Rubella virus infection commonly manifests as a mild disease in children. India initiated the introduction of rubella containing vaccine into the public sector childhood vaccination programme. [1]Rubella is an infection of RuV-Rubella Virus. It provokes a rash, low fever and more. It is very contagious from person to person.

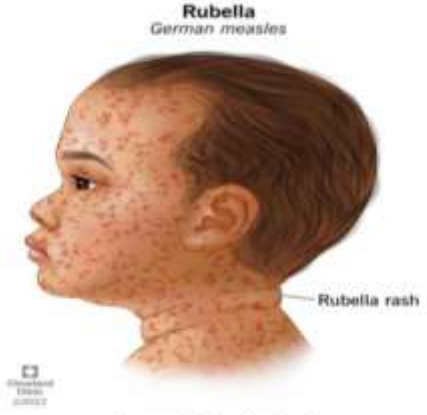

Fig.no.1 Rubella Rash

People who are pregnant and suffering from Rubella causes a pink or red rash that usually starts on your face, neck and trunk and spreads to the rest of your body. What is rubella? Rubella is the contagious disease you acquire from the RuV-Rubella virus. It causes a rash that usually starts on your face and then goes down your body. It can cause serious illness in newborns of people who had rubella while pregnant .What is congenital rubella syndrome? Congenital rubella syndrome is the most severe form of rubella.

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It occurs when a pregnant person transmits rubella to a rash like measles, rubella occurs due to a different virus than measles. It occurs when the pregnant mother transmits rubella to the baby. This consequently triggers skin, hearing, vision, heart, and brain defects at Are rubella and measles the same?

No, rubella and measles are different illnesses. They both give you a rash, but different viruses cause them .Who does rubella affect? Anyone can get rubella, but the most serious form of rubella, congenital rubella syndrome, affects newborns born to someone who had rubella during pregnancy .The United States has eliminated rubella in 2004, but you may still suffer from rubella elsewhere in the world. Measles is caused by the rubella virus. This disease spreads by direct contact with an individual with the virus & through droplets in the air. The danger of measles is very fatal it can lead to deadly complications in one's life. Rubella Virus starts by inducing mild fever and then progresses with rashes on the skin,

SYMPTOMS AND CAUSES

People with rubella who feel unwell usually notice symptoms about 2 – 3 weeks after contact with a person infected with the virus.

Symptoms

a) Read Rash
b) Fever
c) Headache
d) Swollen Glands
e) Runny Nose
f) Joint Pain
g) Read Eyes.

If you are pregnant, you can spread rubella to your baby via your bloodstream. Babies who become infected during pregnancy may also spread rubella after they are born through their respiratory fluids and urine. If you have rubella, it is important to stay home from childcare ,school or work to stop spreading the infection to others. Rubella is contagious from 1 week before the rash appears, and it stops being contagious when you are completely well, or 4 days after you first see the rash whichever is first.

Symptoms of Rubella

About half of rubella cases are so mild that there are no symptoms. If symptoms do occur, they usually appear between two and three weeks after infection. Some of the signs and symptoms of rubella may included.

What causes rubella and how is it spread?

Rubella is caused by a virus. It spreads through contact with an infected person's respiratory fluids, for example, if they cough or sneeze nearby. The rubella virus also spreads through direct contact with the infected person. [3]

DIAGNOSIS

Laboratory confirmation using an algorithm established for RNLSP is crucial for the sustainability of the elimination of measles, rubella, and congenital rubella syndrome .12 Pharyngeal exudates and serum samples are handled concurrently and need to adhere to the days of evolution and probable case definitions. All pharyngeal exudates are examined in real time using reverse transcription coupled to polymerase chain reaction for both diagnoses, while all sera are examined using anenzyme -linked immunosorbent test for measles and rubella. In addition to molecular diagnosis using real-time RT-PCR, the RNLSP performs serological diagnosis for the detection of particular IgM and IgG antibodies for both rubella and measles. In addition to virological techniques and genetic identification of the virus, the Institute of Epidemiological Diagnosis and Reference determines IgG antibodies usingavidity tests for measles and rubella, provided the material is of sufficient quality.In nations where the virus has been eradicated, if a patient has a history of visiting nations where thereis proof of virus transmission or coming into contact with a foreign national who is from one of these nations, and if a sample shows an IgM-negative result for measles or rubella, a second samples hould be taken to check for an increasein IgG antibodies.Asecondsampleis necessary to check

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for seroconversion and an increase in IgG-specific antibody titers in samples that have an Ig positive result for measles or rubella .Quality standards of the test The dependability of the results depends on the promptness and caliber of sample collection, submission, and receipt in the laboratory. The pre-analytical, analytical, and post-analytical phases, as well as the date of the results' release for the epidemiological monitoring system and interested parties, are all covered in the laboratory guidelines.[4]

- Rubella IgM
- Rubella IgG
- Serology test
- PCR testing

TREATMENT

1. **General Treatment(Symptomatic Care)**

A. Rest

Allow the body torecovernaturally.

b.Hydration

Drink plenty water ,ORS ,soups, juices, etc.

C.Feve r & Pain Control

Paracetamol (acetaminophen)

Ibuprofen(if advised by a doctor)

These help reduce:

Fever

Headache

Joint pain

Sore throat

d. Skin Rash Relief

Calamine lotion(if itching)

Cool compresses

Types of Rubella Disease

The disease present sin two main forms ,depending on when the infection occurs:

1.Postnatal (Acquired) Rubella: This is the typical infection in children and adults after birth. Symptoms are generally mild, and some individuals may not show any symptomsatall.Whensymptomsdooccur,theyusuallyincludealow-gradefever,arash that starts on The face and spread to there to the body, and swollenly mphnodes.Jointpainorarthritisis common in adult women.

2. Congenital Rubella Syndrome(CRS):

This is the most serious form of the disease ,resulting from a pregnant person transmitting the virus to their unborn baby through the placenta. Infection during the first trimester (first 12 weeks) of pregnancy carries the highest risk of severe birth defects (up to 85%), which can include:

- Deafness
- Cataracts and other eye problems
- Heart defects(e.g., patent duct us arte riosus)
- Intellectual disabilities
- Liver and spleen damage
- Low birth weight
- Miscarriage or stillbirth

ADVANTAGES

1. Reduces spread
2. Prevents CRS
3. Cost-effective
4. Strengthens health systems
5. Builds herd immunity
6. Safe and effective vaccine

DISADVANTAGES

1. Challenges
2. Vaccine hesitancy
3. Logistical issues
4. Limited awareness
5. Rare mild side effect:
6. Incomplete coverage
7. Need for continuous monitoring

MECHANISM OF ACTION

- Rubella virus infection in the early weeks of pregnancy
- Enzymatic slowing of the metabolism and catabolism of vitamin A, leading to its accumulation in the liver
- Acute liver damage and cholestasis

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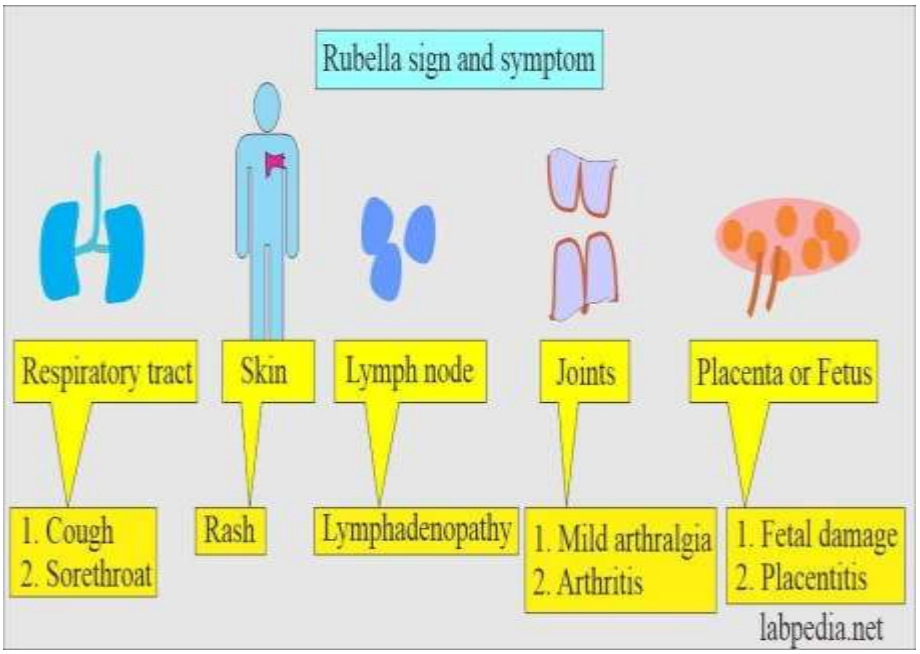
- Spillage of retinoic acids in bile and leakage of retinyl esters into the circulation from damaged hepatocytes Mitochondrial damage, apoptosis, and alterations in DNA

↓

- Congenital Rubella Syndrome

PATHOGENESIS

Respiratory transmission of virus
Spread from person to person via droplets shed from respiratory secretions of infected person
Replicates in nasopharynxn regional lymph node
Viremia 5-7 days after exposure with spread throughout body
Transplacental infection of fetus during viremia



SELF CARE

1 .Rest

Get plenty of rest to help the immune system fight the infection.
Avoid strenuous activities until fever and symptoms have resolved

2. Maintain Hydration

Drink plenty of fluids:
Water
ORS
Fresh fruit juices
Soups
Helps prevent dehydration, especially in children

3. Fever and Pain Relief

Use paracetamol (acetaminophen) for:
Fever
Headache
Body aches
Avoid aspirin in children (risk of Reye's syndrome).

4 .Relieving Sore Throat & Cough

Warm salt-water gargles
Warm fluids like soup or tea
Honey for older children/adults (not for children under 1 year)

5. Reduce Rash Discomfort

Lukewarm baths
Light, non-irritating clothing
Cool compresses to reduce itching (if mild itching occurs)

6. Isolation to Prevent Spread

Stay home and avoid close contact with others for 7 days after rash onset.
Avoid visiting pregnant women, newborns, and immune compromised individuals.

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7. Eye Care
If mild conjunctivitis occurs:
Use clean, warm water to wipe eyes
Avoid rubbing eyes

8. Healthy Diet
Light, nutritious meals
Include fruits, vegetables, and fluids to aid recovery

9. Monitoring Symptoms
Seek medical attention if:
Fever persists beyond 3 days
Severe headache or neck stiffness develops
Rash worsens significantly
Pregnant women are exposed or develop symptoms
There are signs of complications (rare)

CLINICALFUTURE

Clinical Features of Rubella
Rubella usually presents as a mild viral illness, especially in children. Symptoms can be divided into prodromal, rash, and post-rash stages. Adults—especially women—may experience additional joint involvement.

1. Incubation Period
- 14–21 days (average 18 days)

2. Prodromal Symptoms (1–5 days before rash; often mild in children)
- Low-grade fever
- Malaise
- Headache
- Mild conjunctivitis
- Coryza (runny nose)
- Sore throat
- Tender lymphadenopathy (classic)
- Post-auricular
- Suboccipital
- Posterior cervical

Lymphadenopathy is often the earliest and most characteristic feature.

3. Rash (Exanthem)
- Pink, fine maculopapular rash
- Begins on the face, spreads to trunk and limbs within hours
- Fades within 3 days → "3-day measles"
- Mild blanching
- Usually non-pruritic (itching mild or absent)

4. Enanthem
- Forchheimer spots: small red petechiae on soft palate (seen in ~20% of cases)

5. Lymphadenopathy
- Prominent, tender, lasts for weeks
- Post-auricular and suboccipital nodes are classic signs

6. Arthralgia / Arthritis
- Common in adult women
- Affects fingers, wrists, and knees
- Usually transient

7. Other Possible Symptoms
- Loss of appetite
- Mild hepatosplenomegaly (rare)
- Sore joints and fatigue in adult
- Clinical Features in Special Groups
- A. Congenital Rubella Syndrome (CRS)
- Occurs when a pregnant woman (especially in first trimester) is infected.

Classic triad
1. Sensorineural deafness
2. Cardiac defects (PDA, pulmonary artery stenosis)
3. Cataracts

Other features
- Microcephaly
- "Blueberry muffin" rash
- Hepatosplenomegaly
- Intellectual disability

4.AIM AND OBJECTIVES
AIM:-A Review On Gover Rubella Disease

OBJECTIVES
1.Epidemiological Understanding
To review the global and regional burden of rubella infection.

2. Virology and Pathogenesis
To describe the structure, replication cycle, and biological properties of the rubella virus.
To examine mechanisms by which rubella causes fetal damage leading to CRS.

3. Clinical Features
To identify typical clinical manifestations in children, adults, and pregnant women.
To outline complications associated with rubella and CRS.

4. Diagnosis
To evaluate laboratory diagnostic methods such as serology and PCR.
To review the role of prenatal testing in detecting maternal infection and fetal risk.

5. Prevention and Vaccination
To assess the effectiveness of rubella and measles–rubella (MR/MMR) vaccines.
To analyze strategies for increasing immunization coverage, especially among women of childbearing age..

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6. Public Health Impact
To explore the burden of Congenital Rubella Syndrome and its long-term socio-economic consequences. To evaluate national and WHO global programs aimed at rubella and CRS elimination.

7. Research Gaps and Future Directions
To identify gaps in epidemiological data, surveillance systems, and vaccine implementation.

To propose recommendations for improved control and elimination of rubella.
8. To study the epidemiology of Rubella.

9. To study Rubella in pregnancy and its management.

10. Understanding the manifestations of Congenital Rubella.

11. Prevention of Rubella and strategies for Rubella vaccination.

PLAN OF WORK

1.Topic Selection

Rubella Disease Study

2.Background Reading &Problem Identification

3.Literature Review (Epidemiology ,CRS, Virology ,Diagnosis)

4.Define Aim& Objectives

5.Methodology Data Sources, Inclusion Criteria, (Analysis Plan)

6.Data Collection

(Articles ,WHO/CDC data, Case reports, Stats)

7.Data Analysis(Compare findings ,Identify trends

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8.Results& Findings

(Epidemiology, Vaccine Impact ,CRS Burden)

9.Discussion

(Inter prêt results, Compare with literature)

10.Conclusion &Recommendations

11.Prepare Report/Presentation

12.Submit Final Work

NEED OF WORK:

Rubella Still Circulates Globally

High Risk to Pregnant Women

Congenital Rubella Syndrome (CRS) Causes Severe Birth Defects

Many Infections Are Asymptomatic

(Under-detected & Under-rported

Low Immunization Coverage in Some

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Countries/Regions

Need for Stronger Surveillance& Vaccination Programs

Need to Review Epidemiology,

Diagnosis, Prevention & Control

Helps in Achieving Rubella & CRS Elimination Goals (WHO Target)

PREVENTION

Preventive Measures The best preventive measure includes routine childhood vaccination, catch-up vaccination of adolescents, and targeted vaccination of high-risk adult groups. Workers born outside the United States are a potentially susceptible population in which outbreaks may occur after importation of the virus from areas where rubella is endemic.Vaccinating against rubella in workplaces will provide the opportunity to target the susceptible population and is an important step toward elimination of indigenous rubella.The persistence of rubella among females of childbearing age implies that continued vaccination of susceptible women in this age group is required. The lack of evidence for teratogenic effects of the vaccine suggests that the practice is safe. Vaccination of susceptible women of childbearing age should be part of routine general medical and gynecological outpatient care, take place in all family-planning settings, and be provided routinely before discharge from any hospital, birthing center, or other medical facility, unless a specific contraindication exists. Previous administration of human anti-Rho immune globulin does not usually interfere with an immune response Should be provided routinely before discharge from any hospital, birthing center and other medical facility, unless a apecific contraindication exists. does not usually interfere with an immune response to rubella vaccine. However, women who have been given anti-Rho immune globulin should have serological testing 6–8

CONCLUSION

Rubella, also known as German measles or three-day measles, is an infection caused by the rubella virus. This disease is often mild, with half of people not realizing that they are infected. A rash maystart around two weeks after exposure and last for three days. It usually starts on the face and spreads to the rest of the body. The rash is sometimes itchy and is not as bright as that of measles.Swollen lymph nodes are common and may last a few weeks. A fever, sore throat, and fatigue mayalso occur. Joint pain is common in adults. Complications may include bleeding problems, testicular swelling, encephalitis, and inflammation of nerves. Infection during early pregnancy may result in a miscarriage or a child born with congenital rubella syndrome. Symptoms of congenital rubella syndrome manifest as problems with the eyes such as cataracts, deafness, as well as affecting the heart and brain. Problems are rare after the 20th week of pregnancy.

As per World Health Organization the current statement on rubella virus in most of the countries had introduced Measles Mumps Rubella vaccine. World Health Organisation recommends that all countries that have not yet introduced rubella vaccine should consider doing so using existing, well- established measles immunization programmes. To-date, four World Health Organisation regions have established goals to eliminate this preventable cause of birth defects. In 2015, the World Health Organisation Region of the Americas became the first in the world to be declared free of endemic transmission of rubella. The number of countries using rubella vaccines in their national programme continues to steadily increase. As of January 2024, 175 out of 194 countries had introduced rubella vaccines and global coverage was estimated at 69%. congenital rubella syndrome rates are highest in the World Health Organisation African and South-East Asian regions where vaccination coverage is lowest.

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