



Measles, Mumps and Rubella

MBChB III

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Measles

Etiology:

- Measles virus, and RNA virus of genus Morbillivirus
- One serotype

Epidemiology:

- Was endemic throughout the world
- Now due to immunization, rare in developed countries
- Still relatively common developing countries, occurs in epidemics during cold wet seasons.

Transmission

- Airborne – by droplets
- Highly contagious, 90% of susceptible family contacts get disease
- Highest risk group is late infancy
- Humans only host

Clinical findings

+/- History of contact with case of measles

Three clinical stages:

- 1) Incubation period 10 – 12 days
- 2) Prodrome – 2-3 days
 - Low grade fever, coryza, dry cough, Kopliks spots, conjunctivitis
- 3) Enanthem
 - Maculopapular rash – starts face spreads to trunk and extremities, coalesces and desquamates
 - High fever
 - Conjunctivitis

Measles



Complications and Sequelae

Respiratory

- Occur in ~ 15% of patients
- Laryngo-tracheo-bronchitis (LTB)
- Bronchiolitis, viral pneumonia, bacterial pneumonia
- Bacterial superinfection of middle ear

Complications

CNS

- Acute encephalitis, myelitis (guillian barre syndrome)
- Late – subacute sclerosing panencephalitis

Complications

- Exacerbates vitamin A deficiency - xerophthalmia and kerato-malacia
- Hemorrhagic measles
- Transient immuno-suppression leading to reactivation or progression of tuberculosis

Laboratory Findings

- Leucopenia with relative lymphocytosis
- Serum IgM antibody detectable ~ 3days after appearance of rash – confirms diagnosis
- Nasopharyngeal cells – fluorescent antibody staining of antigen diagnostic

Treatment

- Therapy mainly supportive
- Eye – antibiotic eye drops
- Cough – relieve cough
- Antipyretics – paracetamol
- Secondary bacterial infections – antibiotics (pneumonia – parenteral, eye - topical)
- Nutrition – malnourished give vitamin A

Prevention

- Immunization – live attenuated vaccine,
 - Kenya, once at age 9 months
 - West – give 2 doses MMR vaccine at 12-15 months, and 4-6 years
- Post-exposure prophylaxis
 - Susceptible contacts of child with measles give IM immune globulin



Rubella

(German measles)

Rubella

- Etiology
 - Rubella virus
 - RNA virus of rubivirus genus
- Humans only host

Transmission

- Airborne – by droplets of respiratory secretions
- Trans-placental – to fetus causing congenital rubella syndrome
- Humans only host
- Peak age
 - Where no vaccination 5 – 14 years
 - Where routine vaccination - adolescents and adults

Clinical findings – acquired rubella

Most cases subclinical, so rarely have history of contact with case of rubella

Where clinically evident illness occurs, 3 clinical stages:

- Incubation period 14 - 21 days
- Prodrome – 2-3 days
 - Catarrhal symptoms
 - **Tender lymphadenopathy** – retroauricular, posterior cervical and post-occipital (characteristic)

Clinical findings – acquired rubella

- Enanthem
 - Maculopapular rash – starts face spreads to trunk and extremities, coalesces, fades quickly in similar fashion
 - +/- fever
 - +/- conjunctivitis

Congenital Rubella Syndrome

Occurs if mother infected during first trimester (80% infants affected). May have any of the following:

- Growth retardation
- Cardiac anomalies (PDA, VSD)
- Ocular anomalies – cataract, microphthalmia, glaucoma, retinitis
- Deafness
- Chronic encephalitis
- Hematologic – thrombocytopenia, lymphopenia
- Hepatitis

Rubella



Complications and Sequelae

- Arthralgia and arthritis – is transient
- Encephalitis
- Acquired rubella – sequelae rare
- Congenital rubella – sequelae as listed above

Laboratory Findings

- FBC – Leucopenia, +/- thrombocytopenia (esp congenital), hemolytic anemia
- High (rising) rubella serum IgM antibody
- Abnormal liver function tests
- Congenital rubella – low platelets, bone metaphysial longitudinal lucencies
- Viral isolation from throat swabs and urine samples

Treatment & Prevention

- Treatment - supportive

- Antipyretics – paracetamol

- Prevention

- Immunization – live attenuated vaccine, given as MMR at 12-15 months, repeated at 4-6 years and/or 10 years
- Exposed pregnant woman - immunoglobulin



Mumps

Mumps

Etiology:

- Mumps virus
- RNA virus - genus Paramyxovirus
- One serotype

Epidemiology:

- Endemic where no vaccination
- Now due to immunization, rare in developed countries

Transmission

- Virus present in saliva and urine
- Transmitted by direct contact, air-droplets, contact with infective urine
- Peak incidence 5 – 9 years

Clinical Presentation

+/- History of contact with case of mumps

Incubation period 14 - 21 days

Varying presentations:

- 30-40% cases subclinical
- Salivary gland disease (~ 7 days)
 - Enlarged tender parotids (uni- or bilateral)
 - Fever
 - Facial lymphoedema
 - Ear protrudes

Mumps



Clinical Presentation

- Meningo-encephalitis
 - Aseptic meningitis – mild headache in most, 10% develop clinical meningitis or encephalitis
- Orchitis, oophoritis
 - Fever
 - Local tenderness and swelling
 - Usually unilateral
- Pancreatitis
 - Abdominal pain

Complications and Sequelae

- Encephalitis – nerve deafness (high tone)
- Orchitis – sterility (rare)

Laboratory Findings

- Leucocyte count normal
- Viral culture of saliva, throat, urine or spinal fluid
- Serological – ELISA test

Treatment & Prevention

- Therapy mainly supportive - analgesics
- Prevention
 - Immunization – live attenuated vaccine MMR
 - 2 doses MMR vaccine at 12-15 months, and 4-6 years



That's all!