Roseola (Human Herpesviruses 6 and7)

Human herpesvirus 6 (HHV-6A and HHV-6B) and human herpesvirus 7 (HHV-7) cause ubiquitous infection in infancy and early childhood. HHV-6B is responsible for the majority of cases of roseola infantum (exanthem subitum or sixth disease) and is associated with other diseases, including encephalitis,especially in immunocompromised hosts.

A small percentage of children with roseola have primary infection with HHV-7.

Etiology

It is mainly caused by (HHV-6A and HHV-6B) and less by (HHV-7).

Epidemiology

Primary infection with HHV-6B is acquired rapidly by essentially all children following the loss of maternal antibodies in the 1st few mo of infancy, 95% of children being infected with HHV-6 by 2 yr of age.

The majority of infants & children acquire infection from the saliva or respiratory droplets of asymptomatic adults or older children. The peak age of primary HHV-6B infection is 6-9 mo of life.

Clinical Manifestations

Roseola infantum (exanthem subitum , or sixth disease) is an acute, selflimited disease of infancy and early childhood. It is characterized by the abrupt onset of high fever, which may be accompanied by fussiness. The fever usually resolves acutely after 72 hr (crisis) but may gradually fade over a day (lysis) coincident with the appearance of a faint pink or rose-colored, nonpruritic, 2-3mm morbilliform rash on the trunk.

The rash usually lasts 1-3 day but is often described as evanescent and may be visible only for hours, spreading from the trunk to the face and extremities.

Associated signs are few but can include mild injection of the pharynx, palpebral conjunctivae, or tympanic membranes and enlarged suboccipital nodes.

High fever (mean: 39.7°C [103.5°F]) is the most consistent finding. Rash detected either during the illness or following defervescence.
Additional symptoms and signs include irritability,inflamed tympanic membranes, rhinorrhea and congestion, gastrointestinal complaints, and encephalopathy.
The mean duration of illness caused by primary HHV-6B infection is 6 days, with 15% of children having fever for 6 or more days.

Laboratory Findings

The most characteristic laboratory findings noted in children with primary HHV-6B infection are lower mean numbers of total white blood cells (8,900/µL), lymphocytes (3,400/µL), and neutrophils (4,500/µL) than in febrile children without primary HHV-6B infection. Thrombocytopenia, elevated serum transaminase values, and atypical lymphocytes have also been noted sporadically in children with primary HHV-6B infection.

Diagnosis

Although roseola is generally a benign self-limited disease, its diagnosis can exclude other, more serious disorders that cause fever and rash. A history of 3days of high fever in an otherwise nontoxic 10 mo old infant with a blanching maculopapular rash on the trunk suggests a diagnosis of roseola. Other tests are rarely used including: serology, PCR, and viral culture.

Differential Diagnosis

Measles
Drug eruptions
Rubella
enterovirus infection

Complications

Convulsions are the most common complication of roseola and are recognized in up to one third of patients. Seizures are also the most common complication of children with primary HHV-6B infection, occurring in approximately 15%, with a peak age of 12-15 mo.
encephalitis, acute disseminated demyelination, autoimmune encephalitis, acute cerebellitis, hepatitis, and myocarditis.

Prognosis

Roseola is generally a self-limited illness associated with complete recovery. The majority of children with primary infections with HHV-6B and HHV-7 alsorecover uneventfully without sequelae.

Treatment

Supportive care is usually all that is needed for infants with roseola. Parents should be advised to maintain hydration and may use antipyretics if the child is especially uncomfortable with the fever.
Immunocompromised patients with encephalitis may be treated
with ganciclovir, foscarnet, or cidofovir.