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DIAGNOSIS AND MANAGEMENT OF CONGENITAL HIV INFECTION IN INFANTS

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Background: Perinatally acquired Human Immunodeficiency Virus (HIV) infection in infants can present with aggressive opportunistic infections and refractory respiratory failure. Initial screening relies heavily on rapid antibody tests due to their affordability and rapid results (15–20 minutes), compared to Polymerase Chain Reaction (PCR) testing, which requires specialized laboratory facilities and several days. However, in severely immunocompromised infants, antibody production may be lacking, leading to false-negative rapid test results and significant diagnostic delays.

Case Presentation: A 3.5-month-old infant was admitted to the Pediatric Intensive Care Unit with severe acute respiratory failure secondary to pneumonia (SpO_2 84% on room air). Due to progressive clinical deterioration and severe mixed acidosis, the patient was intubated and mechanically ventilated for Acute Respiratory Distress Syndrome (ARDS). The clinical course was complicated by persistent pancytopenia and generalized edema. Initial rapid HIV antibody screening was performed twice and yielded negative results; Additionally, the mother categorically denied any maternal HIV diagnosis or risk factors. Consequently, primary immunodeficiency and multi-drug resistant bacterial/fungal infections were suspected. Broad-spectrum antimicrobials, IVIG, and Valganciclovir (for positive CMV PCR in blood and urine) were administered. Following successful extubation, the infant remained oxygen-dependent with recurrent febrile episodes. Definitive testing via HIV PCR confirmed HIV infection. Subsequent maternal testing following the infant's diagnosis confirmed previously undiagnosed maternal HIV infection.

Conclusions: A negative rapid HIV test and maternal denial do not rule out HIV in infants with profound immune collapse. In infants presenting with refractory ARDS, pancytopenia, and opportunistic infections such as CMV, rapid antibody tests can be falsely negative. Early direct HIV PCR testing is imperative for timely diagnosis and life-saving antiretroviral therapy.

Keywords: Pediatric HIV infection, False-negative rapid HIV test, Acute Respiratory Distress Syndrome (ARDS), Severe acute respiratory failure, Opportunistic infection