



4° CONVEGNO NAZIONALE
LE GIORNATE DI
**INFETTIVOLOGIA
PEDIATRICA**

Chair: Vania Giacomè



MILANO
30/09-01/10/2026

AULA MAGNA
Università degli Studi di Milano



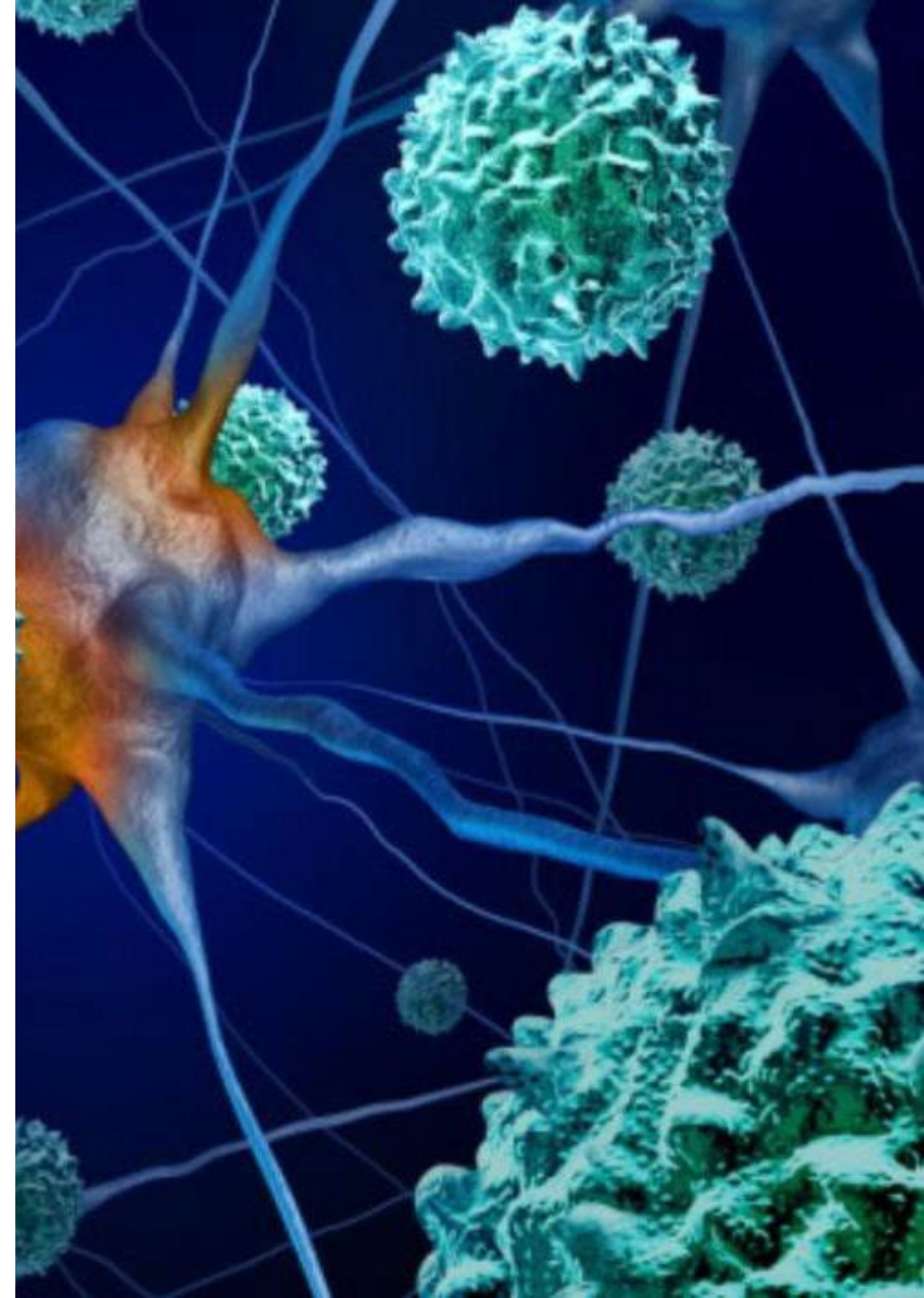
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Antibiotic stewardship and early molecular diagnosis: our clinical cases

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WHO guidelines strongly recommend molecular testing for individuals with suspected acute meningitis. Rapid identification of the causative pathogens within hours is essential. Enteroviruses (EV) are a prominent source of infection in the pediatric population. Most cases occur in the neonatal period and the first months of life, when infections are most clinically relevant. The marked epidemiological variability of EVs makes molecular epidemiology crucial, aimed at identifying the serotype variants most circulating in specific areas and time periods. The diagnosis of these infections is currently based on the identification of viral RNA in biological samples (usually CSF and blood, but also respiratory specimens or stool samples) by polymerase chain reaction (PCR). EV infections generally have a benign course with an excellent prognosis; however, they can present with more severe features, especially when they begin in the first days of life. The clinical conditions associated with the highest mortality are myocarditis, hepatitis, and multiorgan failure. Long-term neurocognitive sequelae have been described in cases of severe infection involving the central nervous system (meningoencephalitis).



Although the use of antiviral agents has been reported in single cases or studies involving a small number of newborns with severe infection, treatment of these infections remains primarily supportive, and further studies are needed to confirm the actual usefulness of these drugs in clinical practice. We present the clinical case of two low-birth-weight twins born at term from TC. The first of the two newborns was admitted to the emergency room with low-grade fever, loss of appetite, and a plaintive cry. Blood tests showed elevated inflammatory markers (CRP and procalcitonin), and the complete blood count showed leukopenia with neutropenia. Due to suspected sepsis, the newborn was placed on dual antibiotic therapy with ampicillin and gentamicin after a negative blood culture. After 4 days, the twin was brought to the emergency room with a fever and the same clinical picture as his brother upon admission. The mother also reported gastrointestinal symptoms in her 4-year-old eldest son. After a spinal tap, multiplex molecular diagnostics revealed positive enteroviruses in both twins. Only the twin who first arrived at our attention was treated for seizures due to right upper limb clonus. Both infants showed no neurosensory abnormalities: MRI was normal, and ABR and VEP were normal. Psychomotor developmental milestones were normal until one year of age for both.

The patients are currently undergoing neurological follow-up. Molecular diagnosis allowed for a rapid etiological assessment, limiting the use of antibiotics, and providing clinical attention instrumental to the neurological evaluation.