

# Echovirus 11 in newly born twins: Case in Italy shows close genetic relation to strains found among neonates in France

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Enteroviruses can cause various infectious illnesses. Especially among infants, disease manifestation can range from showing no symptoms to

severe and even fatal. One of the most common enteroviruses is echovirus. Echovirus 11 (E11) and other enteroviruses have been circulating continuously in the European Union.

Enteroviruses are a group of viruses that cause a number of infectious illnesses. They are usually mild. However, if they infect the central nervous system, they can cause serious illness. The two most common ones are echovirus and coxsackievirus, but there are several others. Enteroviruses also cause polio, and hand, foot and mouth disease (HFMD). Most illnesses caused by [enteroviruses](#) are mild but more severe diseases can sometimes develop in certain patients, including brain and heart conditions, pneumonia and hepatitis. Also, the viruses can spread to other organs such as the spleen, liver, bone marrow, skin and heart.

Recently, a group of French clinicians and researchers described an observed increase in both incidence and severity of acute and fulminant hepatitis associated with an emerging lineage of E11 in newborns in France since summer 2022. This upsurge has been particularly affecting male twins.

In a rapid communication published in the latest issue of *Eurosurveillance*, researchers report on a pair of male [twins](#) in Italy who also developed severe hepatitis caused by E11. In one of them, the disease progressed to so-called fulminant hepatitis, i.e., sudden onset, a quick change to the worse and development of life-threatening inflammation of the liver. While one of the twin brothers was discharged from hospital several weeks after birth, his brother was transferred to another pediatric intensive care unit for further treatment and possible liver transplantation.

The researchers highlight that "for both infants, survival was strictly dependent on rapid recognition of the infection and timely

administration of intensive care. According to the French report and ours, a host genetic predisposition in male and twin categories might be hypothesized."

Whole genome sequencing of the samples in Italy showed that the E11 genome was closely related to the strains identified in the outbreak reported from France (99% nucleotide identity). However, the origin of this divergent lineage has yet to be identified. Neither have the [risk factors](#) for a severe course and the underlying causative mechanisms related to E11.

**More information:** Antonio Piralla et al, Fulminant echovirus 11 hepatitis in male non-identical twins in northern Italy, April 2023, *Eurosurveillance* (2023). [DOI: 10.2807/1560-7917.ES.2023.28.24.2300289](#)

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