

Prevention of hepatitis virus C vertical transmission: a case report

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ABSTRACT: Chronic hepatitis C virus (HCV) infection is a major health problem worldwide: 130-150 million people are infected, with a percentage between 0.05% and 5% of pediatric cases. Up to now, the leading cause of infection in childhood is the vertical transmission, and no effective methods to prevent perinatal transmission are still available. This case report presents the successfully avoidance of a vertical infection by the treatment of HCV infected adolescent. The girl was treated with pegylated interferon and ribavirine and, after six months the end of the therapy, she discovered to be pregnant. The child was born after nine months by vaginal delivery, and he was breastfed up to 10 months of age. The screening of HCV antibodies at 12th month of age was negative, so the vertical transmission of HCV infection was excluded. Despite current EASL recommendations and NASPGAHN guidelines, there is still uncertainty about the timing of treatment initiation and no mention on the treatment of HCV infected female adolescents in childbearing age. Here we would invite to consider that the therapeutic intervention in adolescents could lead to a significant decrease in the HCV pediatric incidence, reducing either the sexual and the vertical transmission.

— **Key words:** Hepatitis C virus, Chronic hepatitis, Vertical infection, Mother to child transmission, Children.

INTRODUCTION

Chronic hepatitis C virus (HCV) infection is a major health problem worldwide. The number of HCV infected people is estimated to be 130-150 million, and the percentage of paediatric patients affected is between 0.05% and 5%¹. Whereas adults with acute hepatitis C infection may be symptomatic, infants who acquire the infection by vertical transmission are virtually asymptomatic, except for possible elevated transaminase levels². Nonetheless, cirrhosis and rarely hepatocellular carcinoma have been reported during childhood³. Up to now, there are no effective methods to prevent perinatal transmission. With the introduction of blood product screening, the leading cause of childhood HCV infection is the mother to child transmission (MTCT). HCV MTCT rate is estimated 5%, higher for women with high viral load, HIV co-infection, prolonged rupture of membranes, vaginal or perineal laceration^{4,5}.

This case report aims to highlight the importance of a strategy of prevention of MTCT that includes the treatment of HCV infected sexually active females, even adolescents. Up to date a broad range of new drugs is available for HCV infected adults, while drugs for children and adolescents are still limited.

CASE REPORT

An 18-years old girl HCV-infected by vertical transmission, genotype 3a, was followed at the Paediatric Centre of Infectious Disease at the Luigi Sacco Hospital of the University of Milan, with regular clinical visits, blood examinations and instrumental testing since birth. In consideration of important liver inflammation and in the absence of specific contraindications, antiviral therapy with pegylated interferon (180 mcg once a week) and ribavirine (400 mg bid) was initiated and continued for 24 weeks. After 4 weeks of treat-

ment, the patient displayed a rapid virological response confirmed by undetectable HCV-RNA. Therapy was well tolerated. Side effects such as mild asthenia, occasional headache, transient and mild leukopenia with neutropenia were not clinically relevant throughout treatment. A routine pregnancy test was performed before starting therapy, which resulted to be negative. During antiviral therapy and for the months following the end of treatment, the patient was instructed to use adequate contraception. Suddenly, 6 months after the end of therapy she became pregnant. Throughout her pregnancy, she showed a suppressed HCV-viral load. The baby, a boy, was born at 38th week of gestation, by vaginal delivery. He did not show any clinical problem during the neonatal period and he was breastfed up to 10 months of age. At birth, HCV antibodies titre was positive and HCV-RNA was negative. He was followed with clinical and serological follow-up until the 12th month of life, showing good physical conditions, normal growth and weight; HCV-RNA viral loads performed at 3rd, 6th and 12th month were negative. Since the screening of HCV antibodies at 12th month of age was negative, so the MTCT was excluded.

DISCUSSION

Up to date the complex interaction between maternal-foetal immune system and the mechanisms of vertical transmission are still matter of study⁶⁻⁷. The MTCT remains the main way of HCV infection in paediatric age. Although there are new effective interferon-free regimens with an excellent outcome in adults, no interferon-free drug is still licensed for the use in paediatric patients, and PEG-IFN- α with ribavirin remains the standard of care in children and adolescents aged 3-17 years.

Current 2015 EASL recommendations, indicate that treatment should be prioritized in individuals at risk of transmitting HCV, conversely, in NASPGAHN guidelines, there is still uncertainty about the timing of treatment initiation and no mention on the treatment of HCV infected female adolescents in childbearing age⁸.

CONCLUSIONS

As paediatricians, we consider fundamental spread the treatment to all HCV infected children to avoid the complications of the infection during the growth, and to improve the quality of life, and, in particular, therapeutic intervention in adolescents could lead to a significant decrease in the paediatric incidence, acting either through the sexual and the vertical transmission.

CONFLICT OF INTERESTS:

The Authors declare that they have no conflict of interests.

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