Adenovirus infection is self-limiting in immunocompetent children but can be severe and potentially fatal in immunocompromised children. Cidofovir is used in severe Adenovirus infection in immune compromised paediatric patients as standard practice but its use in immunocompetent children with severe disease is not well described.

We used Cidofovir successfully in a 5-month-old infant with severe Adenovirus infection. Born at 30 weeks gestation weighing 475 g, she suffered from chronic lung disease and presented with a clinical bronchiolitis illness proven to be due to adenovirus. The infection progressed rapidly to severe lung disease needing nitric oxide, high frequency ventilation and inotropes. Initial Adenovirus viral load was 43,000 copies and following MDT discussion and counselling of the family, a 5 mg/kg once weekly course of Cidofovir was administered. Her viral load increased to a maximum of 444,000 copies but this improved to < 400 following treatment. No nephrotoxicity was experienced; she recovered from her illness and was discharged to her local hospital.

We undertook a systematic review of the published evidence of the use of Cidofovir in children and identified 40 articles of which 29 were relevant. The majority of literature reports the use of Cidofovir in immune compromised children with Adenovirus or CMV infection. There was limited evidence of its use in immunocompetent children. The mortality rate of severe adenovirus infection is high in children who are immune compromised, but no clear evidence of benefit in Cidofovir use was identified in the paediatric studies reviewed. A recent report of early use in adenovirus infection in 7 immunocompetent adults suggested evidence of possible benefit.

A common side-effect of Cidofovir is nephrotoxicity, with up to 28% of patients reported to develop evidence of renal dysfunction. Alternative dosing regimens are recommended if patients are nephropathic or at high risk of acquired renal injury.

We weighed the potential benefit of treatment against the risk of nephrotoxicity in our patient and successfully treated a potentially fatal illness. We believe that Cidofovir could be used in immunocompetent patients with severe adenovirus infection but acknowledge that further research evidence is required before this treatment can be recommended.

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