

A case of severe ARDS in Adenovirus pneumonia successfully treated with Cidofovir: could lung ultrasound score be useful to guide and monitor antiviral treatment?

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Argomento: Caso clinico

Background: Adenovirus HAdV-55 has been recently described to cause severe pneumonia in immunocompetent adults¹. There is no agreement about the adequate therapy, but some cases report Cidofovir efficacy². Lung ultrasound (LUS) is a bedside technique allowing ARDS assessment and monitoring³.

Aims and Objectives: To describe a case of immunocompetent 77-year-old man with severe ARDS caused by HAdV-55, treated with Cidofovir and monitored with LUS.

Case description: The patient was admitted to ICU with severe hypoxemia ($\text{PaO}_2/\text{FiO}_2=50$ with reservoir-bag mask), requiring intubation. Initial CT showed parenchymal consolidations in dependent areas, in right upper lobe and diffuse ground-glass opacities. LUS score was performed daily, examining 6 regions per hemithorax, each scored from 0 (normal) to 3 (complete consolidation). First global LUS score (obtained by the sum of regional scores) was 22. Empiric broad-spectrum antibiotics were started. Bronchoalveolar lavage, nasal swab and plasma resulted positive for HAdV-55. Despite esophageal-pressure guided protective mechanical ventilation, multiple cycles of prone positioning, toilette fiberbronchoscopy and iNO, 8 days later the patient was still severely hypoxemic, with higher HAdV's viral charge and a worsened LUS score (26). Off-label therapy with Cidofovir was administered (single dose-5mg/kg). Thereafter, we observed a progressive increase in $\text{PaO}_2/\text{FiO}_2$ ratio (from 54 to 270), with parallel reduction of LUS score (8)(Fig.1), as later confirmed by CT-scan. Viral samples required two weeks to show a reduction in HAdV-55 charge. The patient progressively improved and was finally discharged to a peripheral ICU while in weaning from mechanical ventilation.

Conclusions: Cidofovir for Adenovirus pneumonia is under discussion; LUS could integrate standard clinical and imaging assessment, allowing a daily reliable monitoring of aeration, helpful to decide to start and monitor the off-label, while reducing the need of CT.

References: 1.Narra, J Clin Virol.2016 2.Doan, Offic. Publ. Int. Soc. Heart Transplant.2007 3.Mojoli F, Am J Resp Crit Care Med.2018

Fig.1: Trend of lung ultrasound score, oxygenation and viral charge

