Zolgensma and Spinal Muscular Atrophy: evidences, uncertainties and budgetary impact

Introduction: Spinal Muscular Atrophy 5q type 1 (SMA 5q type 1) is a severe form of a genetic disease characterized by motor neuron degeneration and progressive muscle weakness. Zolgensma (AVXS-101) is a gene therapy for SMA 5q type 1, not approved in Brazil yet. The objective of this study was to identify the best scientific evidence of efficacy, effectiveness and safety of the new technology, as well as to evaluate the budgetary impact of an incorporation in SUS.

Method: A structured search was performed in The Cochrane Library, Medline (via Pubmed), EMBASE, LILACS and clinicaltrials.gov databases, complemented by a manual search of literature and information in international agencies. A budget impact analysis was also performed in the Brazilian context.

Results: Two phase I clinical trial publications were found, totaling 20 months of follow-up (15 patients) and four months of extension (12 participants). Even with a high risk of bias, studies have identified effective survival outcomes, reduced use of permanent ventilation and improve of motor milestones. In a cost-effectiveness study of AVXS-101, from the perspective of US private health insurance, AVXS-101 was cost-effective compared to nusinersena (ICER $ 31,379 per QALY earned and price of AVXS-101 ≤ US $ 5 million). It was estimated that the budgetary impact for incorporation into SUS, considering the internationally announced price, would vary between R$ 1,850,000 and R$ 7,490,000 in the first five years.

Conclusion: Results from the new technology phase I clinical trial indicate efficacy for SMA 5q type I, but there is great uncertainty surrounding these findings given the high risk of study bias. In addition, the high cost of the drug raises the need to discuss pricing based on the true therapeutic value of technology, in order to preserve the sustainability of the SUS and the provision of technologies for rare diseases.

Keywords: Spinal Muscular Atrophy, Onasemnogene Abeparvovec-xioi, Zolgensma, AVXS-101.