A case of central nervous system vasculitis related to an episode of Guillain-Barrè syndrome

ABSTRACT

In their research, the authors describe an uncommon case of isolated vasculitis that occurred during an auto-immune Guillain-Barrè syndrome (GBS) and was restricted to the left sylvian artery, caused by cytomegalovirus (CMV). Despite plasma exchanging and immune-modulating therapy, an acute cardiopulmonary failure resulting from CMVC was observed. After being released from rehab, she was given IgM-enriched formula and experienced a rapid recovery from GBS and vasculitis the next month.

INTRODUCTION

The interaction between the MS2 coat protein and its translational operator is a well-established example of RNA-protein recognition, utilizing genetic, biochemical, and structural methods. Figure 1 displays the primary and secondary structures of the recombinant rRNA hairpin that establish contacts with both subunits of each coat proteins dimer. The coat protein complex with its RNA target is highly intricate, as two unpaired adenosines are inserted into equivalent pockets on different subunits of the coat dimer (Figure 2). The interactions between A-4 and A-10 with coat proteins involve non-identical contacts with the same five amino acid residues, Val29, Thr45, Ser47, Finally, and Lys61. The use of X-ray crystallographic analysis indicates specific amino acid-nucleotide interactions, but fails to provide a clear explanation of their respective roles in RNA-binding and translational repression. In the experiments described here, we used amino acid substitutions of A-pocket amino acids in single-chain coat protein heterodimers to determine the significance of each residue's interaction with A-4 and A-10.

CONCLUSION

A pediatric porcine model of independent lung mechanical ventilation with severe methacholine-induced bronchospasm demonstrated that heliox improved pulmonary mechanics when used as a substitute for nitrogen gas in the same ventilator mixture. The authors conclude that heliox may be useful for critically ill children with small endotracheal tubes, severe bronchospasm, high airway resistance, and low compliance, as demonstrated by the fact that most subjects responded to pharmacotherapy within the first 4min of therapy and maintained this response for at least 20min. The improvement of tidal volume, lung compliance and resistance, as well as the potential decrease in ventilator barotrauma, may be achieved through heliox in patients who are waiting for etical targeted therapies to take effect.