

Use of ASCENIV in a Young Male with Immune Abnormalities and Multiviral-Induced Respiratory Failure

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Summary

• A 15-month-old male with chronic Respiratory Syncytial Virus (RSV) infection presented with multiviral bronchiolitis and acute hypoxic respiratory failure.
• RSV, rhinovirus, and enterovirus were detected from nasopharyngeal swab.
• Immune evaluation demonstrated progressive T-cell lymphopenia and specific antibody deficiency (SAD).
• Standard immune globulin intravenous (IVIg) was initiated followed by ASCENIV, which led to rapid improvement of his clinical course.

Clinical Case

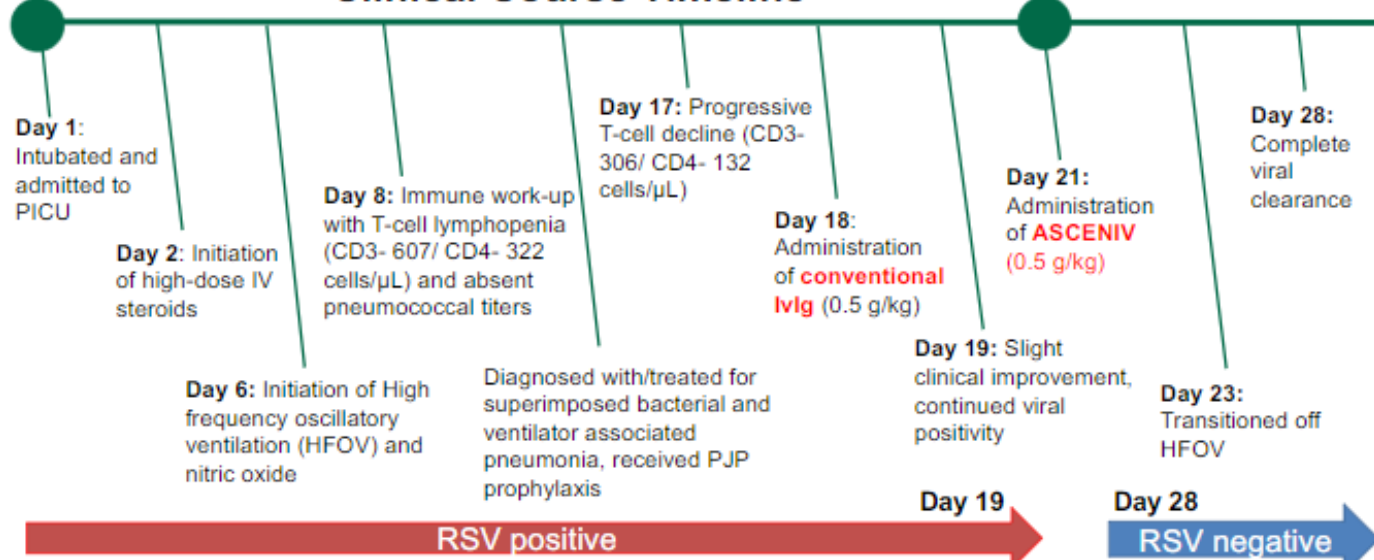
Clinical History:

- Previously healthy, fully immunized
- One bilateral ear infection
- Frequent respiratory viral infections
- Diagnosed at 11 months with chronic RSV, never completely recovered (intermittent fever, hypoxia, and increased work of breathing)

Presentation:

- Significant respiratory distress, grunting
- Hypoxic with an SpO₂ of 88%

Clinical Course Timeline



Hospital Day	Day 1	Day 8	Day 19 (status post standard IVIG)	Day 28 (status post ASCENIV)	Day 34
RSV	+	-	+	-	-
Rhino/Enterovirus	+	+	+	N/A	-

ASCENIV Information

- Novel IVIg product approved in 2019 with unique composition
- Contains high-titer neutralizing anti-RSV antibodies (1.9-fold compared to conventional IVIg) [1-2]
- Enriched for antibodies to several other viral pathogens approved for adults and adolescents ≥ 12 years with primary immunodeficiency.
- The safety and effectiveness of ASCENIV has not been well studied under 3 years of age [3-4].
- A case series reviewed two patients who were ≤ 5 years with RSV bronchiolitis that received ASCENIV in the intensive care setting and subsequently fully recovered from their illness [5].

Discussion

- Due to the severity of clinical decompensation secondary to chronic multiviral bronchiolitis, this case should raise concern for primary immunodeficiency.
- This unique presentation propelled the clinical team to pursue ASCENIV (after conventional IVIg) for the treatment of severe multiviral infection in an immune deficient patient.
- This case suggests the benefits of ASCENIV were revealed in a young patient with PI that is within this less studied age cohort.

References

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