



## High frequency percussive ventilation and bronchoscopy during extracorporeal life support in children.

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### **ABSTRACT:**

Variables affecting duration of pediatric extracorporeal life support (ECLS) are poorly defined. Prior analyses suggested increased mortality risk with prolonged ECLS. Lung recruitment strategies with improved secretion mobilization may shorten ECLS duration. High frequency percussive ventilation (HFPV) has been used, predominantly in inhalational injury, as a mode of ventilation to improve secretion clearance. We describe the application of HFPV and therapeutic bronchoscopies in pediatric ECLS, and evaluate outcomes with a same-center historical control population. After May, 2011, all children (n = 14) on ECLS were managed with HFPV during extracorporeal support (HFPV cohort). This group's demographics and outcomes were compared to ECLS patients in our unit immediately prior to the utilization of HFPV (pre-HFPV cohort, n = 22). The HFPV and pre-HFPV cohorts had similar demographics and utilization of venoarterial ECLS. In univariate analysis, the HFPV group underwent more bronchoscopies and experienced more ECLS-free days (days alive and off ECLS) at 30 and 60 days. In multivariate analysis, use of HFPV was independently associated with ECLS-free days. We conclude that use of HFPV and bronchoscopies during ECLS for respiratory failure was associated with an increase in ECLS-free days, and that this association should be prospectively evaluated.

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