

TITLE: Neurally Adjusted Ventilatory Assist (NAVA) and Bronchopulmonary Dysplasia (BPD): A Retrospective Review

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RESEARCH PROJECT DESCRIPTION

BPD, or chronic lung disease of the newborn, is the most common complication of prematurity. The adverse effects of BPD on health and quality of life in preterm neonates may persist into adolescence or beyond. The multifactorial etiology of BPD has frustrated preventive efforts. Mechanical ventilation damages newborn lungs and contributes to the pathogenesis of BPD. Hence, research targeted at minimizing lung trauma through innovations in ventilator technology and techniques is very relevant.

NAVA is a new technique of mechanical ventilation, in which where the patient's respiratory drive controls the timing and the magnitude of pressure of each breath delivered by the ventilator. NAVA has been implemented safely and has been shown to improve patient-ventilator synchrony, to minimize airway pressure and tidal volume, and to unload the respiratory muscles. Nonetheless, studies of NAVA in preterm infants are sparse and have reported on only small numbers.

At UF Health Jacksonville, we have used NAVA successfully for last 4 years. This retrospective review will compare BPD outcomes for 3 years prior to the introduction of NAVA to outcomes of infants managed with NAVA in the past 3 years.

In addition, we will also assess important secondary outcomes – e.g., time to extubation and the number of total ventilator days. Should this evaluation suggest that NAVA has a positive effect on primary or secondary BPD outcomes, we plan to design a randomized control trial of the effect of NAVA vs conventional ventilation on BPD and associated respiratory outcomes in preterm neonates