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A Multidisciplinary Chronic Lung Disease Team in a Neonatal Intensive Care Unit is Associated with Increased Survival to Discharge of Infants with Tracheostomy

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Research Abstract Title

Submitting/Presenting Author (must be a trainee): Taylor P Hansen
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- Resident/Psychology Intern (≤ 1 month of dedicated research time)
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Describe role of Submitting/Presenting Trainee in this project (limit 150 words):

Retrospective chart review performed on selected patients and data recorded. Met with mentor and statistician to review statistics and postulate a method for presentation. Abstract developed and then reviewed and edited with mentor.

Background, Objectives/Goal, Methods/Design, Results, Conclusions limited to 500 words

Background:

Despite advances in neonatal care, the incidence of chronic lung disease (CLD) has remained the same. Practice variability has contributed to the challenges to prevent CLD or bronchopulmonary dysplasia (BPD) specifically. With the recognition that CLD/BPD is a multifactorial disease, management guidelines are slowly emerging specifically for those with established severe BPD phenotypes. In our regional level IV NICU, a multidisciplinary team was organized in 2010 to provide a consistent evidenced-based and consensus-driven approach in the management of infants with CLD.

Objectives/Goal:

To describe the effect of a multidisciplinary team-based approach in the survival to NICU discharge of infants with severe CLD who received tracheostomy during the initial NICU hospitalization. Secondly, to describe patient characteristics and identify risk factors for death prior to discharge.

Methods/Design:

Infants with CLD at risk for needing tracheostomy for long term assisted home ventilation are cared for by the CLD team. Team meets bimonthly to provide consensus management guidelines. In addition, the CLD team provides regular educational updates, implements clinical practice guidelines and develops quality improvement

initiatives that are specific to CLD patients. To evaluate the effect of CLD team approach to survival rates to discharge of patients with CLD, a retrospective, IRB approved chart review of all infants with CLD from 2008-2018 was conducted.

Results:

A total of 267 patients were included. Mean gestational age was 28.5 (SD=5.2) weeks with a mean birth weight of 1.3kg (SD=0.97), white (62.2%), and male (56.2%). There was a positive average trend for total number of patients and patients requiring tracheostomy since organization of the CLD team. Primary diagnosis of prematurity and genetic conditions have increased over time. Number of deaths remained the same. Logistic regression analysis showed that tracheostomy does not increase the odds of death before discharge. Pulmonary hypertension as a comorbidity increases odds of death + trach (OR=13.58 p-value=0.0007); death (OR=8.587 p-value=<0.0001); trach (OR=1.795 p-value=0.0264).

Conclusions:

A multidisciplinary team-based approach to the management of infants with CLD has resulted in increased survival of premature infants with CLD needing tracheostomy and that tracheostomy does not increase the odds of death prior to discharge. Pulmonary hypertension is a strong predictor for need for tracheostomy as well as tracheostomy + death.