Physical & Occupational Therapy Mobility is Safe and Feasible Prior to First Trach Change in Children after Tracheostomy.

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Problem

- The standard of care for pediatric patients after a new tracheostomy was bedrest until the first trach change was successfully completed, typically on POD 5-7.
- The benefits of early mobility for hospitalized patients is well established and includes shorter ICU length of stay, greater likelihood of discharge home, and more functional independence at discharge.
- Conversely, the risks of bedrest include the development of ICU acquired weakness, insulin resistance, microvascular dysfunction, and disruption of the sleep/wake cycle. These effects can be appreciated in as little as 5 days of bedrest.
- Adult patients are routinely mobilized on POD0 after a new tracheostomy, but children are still subjected to this period of bedrest prior to mobilization.

Goal

- We set out to do this study to determine the safety and feasibility of physical and occupational therapy mobilization of pediatric patients (over the age 3) within the first week after a tracheostomy (prior to their first trach change).

Innovation

- Literature review to determine optimal protocol
- Discussion with ENT regarding our proposed study – ENT comfortable with attempting mobility as early as POD3 prior to trach change
- Discussion with PICU attending, PICU nursing champion, and RT regarding changing processes
- Education for PICU nurses
- Education for PT and OT team
- Eligible participants approached and families consented/patients assented
- Nurses and therapists completed competencies
- New protocol implemented at first PT and OT treatment session and continued until trach changed successfully
- Continuous assessment during therapy treatments and chart reviews post-treatments to assess for adverse effects of protocol

Results

- A power analysis determined that 12 participants needed to complete the study to determine that the protocol was safe and feasible
- 12 participants were enrolled and completed the protocol
- All participants received either a cuffed Shiley or a cuffed Bivona trach.
- All participants had at least 1 co-morbidity and some had as many as 12 comorbidities.
- Half of the participants were following ≤50% of commands during the first day of mobilization
- 4 were considered critical airways
- There were zero adverse events.
- There was no need for additional staff or equipment – there was no cost involved in implementing the protocol

Conclusions and Next Steps

- Physical and occupational therapy mobilization prior to first trach change is safe and feasible.
- After study completion, the results were discussed with ENT and the standard of care was changed to the study protocol
- Next, we can design a study to determine the effectiveness of early mobilization in this population

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