Does premedication with neuromuscular blockade for intubation improve intubation success in the NICU?

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Neonatal intubation is a lifesaving, yet high risk procedure for neonates with respiratory failure. While intubation is one of the most common procedures performed in neonatal intensive care units (NICU), limited literature is available to describe current neonatal practice, safety and procedural outcomes across NICUs. As a result, there are controversies in the practices surrounding intubation in NICUs. One of these controversies is the use of premedication. Not unlike other NICUs, we do not routinely premedicate prior to intubation, therefore I want to look at the evidence for use of a neuromuscular blockade for intubation in the NICU. In a study conducted by Ozawa et al, the first ime intubation success in neonates with neuromuscular blockade was improved when compared to no predication or sedation only, though the treatment groups were not similar. Roberts et al found that there was a decrease in the number of intubation attempts when paralytic agent was used, but their results were limited due to sample size. Krick (2018) conducted a prospective cohort and reported less adverse effects when a paralytic was used compared to no premedication, but the demographics of each group was unknown. Finally, Le et al evaluated pediatric and neonatal trainees, concluding that there was no difference in intubation success with the type of premedication used. Again, the group demographics were unknown so it was impossible to make a practice change based on their findings. Through four appraised articles (3 cohort and 1 RCT), I concluded that while some studies showed that use of NM blockade can improve first time intubation success and decrease adverse events, there were significant flaws in the studies themselves, preventing me from changing my practice. Such flaws included statistically different treatment and control groups, small sample size, and lack of patient demographics reported.

References

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