Abstract

Background
Intubation is a painful and stressful procedure frequently performed in the NICU, yet less than 1% of US preterm infants receive premedication. The purpose of this study is to evaluate the efficacy of an intubation protocol in the NICU to add one 2mcg/kg dose of fentanyl prior to the procedure.

Objectives
The primary outcome was to decrease the time to successful intubation. Secondary outcomes were to increase staff knowledge regarding procedural pain, to reduce the number of attempts and to decrease adverse physiologic events.

Design
Staff attended one educational session. Pre- and post-tests assessed knowledge, beliefs, and attitudes. Data pre- and post-protocol change included: time fentanyl given, time laryngoscope placed, time to successful intubation, number of attempts, and experience of intubator.

Subjects
Fifty-five infants in the NICU were evaluated during the intubation procedure (31 prior to initiation of the protocol and 24 after protocol change). There were no significant differences in birth weight, weight at intubation, gestational age, and chronologic age between groups.

Results
Fifty-three staff completed an adapted version of the Pediatric Nurses’ Knowledge and Attitudes Surveys pre- and post educational session. Scores were expressed as % of correct responses. Mean scores for the posttest were significantly higher 13.81 (92%) than the pre-test 12.6 (81%) (p<.003). There were no differences in mean increase in scores within groups but significant differences were seen between groups. There was no significant difference in neonatal baseline demographics. There were no differences in time to successful intubation, number of intubation attempts, or variation in physiologic variables. NNPs performed 51% of the intubations. There was a significant difference in time to intubation (326 vs. 134 seconds; p<.003) and number of attempts (2.56 vs. 1.61; p<.013) when comparing NNPs with all other providers regardless of premedication.

Recommendations
The results of this study indicate that a continuing education program about neonatal pain should be developed for all caregivers in the NICU. The lack of significant difference in time to successful intubation, number of intubations, or variation in physiologic variables of the neonates might be explained by the fentanyl dose being too low.