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[2020] Management Trends of Term Infants with Respiratory Distress

Michael N. Musci, Sharon Kirkby, Alan R. Spitzer, Michael Kornhauser Paidos Health Management Services, Paoli, PA; Pediatrics, SUNY, Stony Brook, NY

BACKGROUND: The optimal management for term infants with respiratory distress (RD) at birth has rarely been studied. There is a significant # of patients (pts) with this clinical condition admitted to the NICU. Advancements have made the use of Continuous Positive Airway Pressure (CPAP) easier to administer.

OBJECTIVE: To determine trends in management for the term infant with RD at birth, particularly evaluating the impact that CPAP vs. mechanical ventilation (MV) has upon reaching certain milestones.

DESIGN/METHODS: 1,613 pts entered into the Paidos database that were born between 1/1/99

and 9/1/01, were  37 weeks at birth and were admitted with a diagnosis of RD (ICD-9 code 769.0) were reviewed. Infants treated with CPAP only (CPAPo), MV only (MVo) or CPAP+MV (BOTH) were included for this analysis. Gestational age (GA), birthweight (BW), surfactant use, # of days of CPAP and MV, time to room air (RA), time to initial feeds, and length of stay (LOS) were evaluated.

RESULTS: 642 infants received CPAPo, MVo or BOTH. From 1999 to 2001 the # of pts receiving CPAPo rose from 34.6% to 57.5% while the # of pts treated with MVo and BOTH decreased from 16.0% to 13.0% and 49.4% to 29.3% respectively ($p < .001$). For the 642 infants, there were no differences in GA or BW from 1999 to 2001. The # of ventilator days and the use of surfactant did not change in the 3 years. For pts treated with CPAPo, the time to reach room air did not change during the 3-year interval. During this time frame there was a significant decrease in the time to initiate feeds, from a mean of 4.6 days to 3.9 days ($p < .05$) after admission. There was also a decrease in mean LOS from 10.2 to 8.5 days ($p < .05$). In the group that received MVo, there was no difference from 1999 to 2001 in the mean # of ventilator days. For all pts, the mean # of ventilator days per pt fell from 2.6 to 1.6. ($p < .05$). Overall illness severity during the study period appeared to be similar, as indicated by similar BW, GA, surfactant use and time to reach RA.

CONCLUSIONS: In this National cohort of term infants with RD at birth there was a significant increase in the use of CPAP from 1999 to 2001. This appears to have a positive association with earlier achievement of feeding initiation and discharge to home. This encouraging trend deserves further prospective, randomized study given the profound impact it could have on health outcomes and overall cost.

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