Effectiveness and safety of repeat dexamethasone for bronchopulmonary dysplasia

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Objectives

- To describe effectiveness of repeat dexamethasone treatment for bronchopulmonary dysplasia (BPD) and to evaluate potential detrimental effects on growth and neurodevelopment.

Methods

- 10-year single-center observational study
- Infants <30 weeks’ gestational age at birth treated with 1 or 2 courses of systemic dexamethasone for BPD
- Effectiveness was defined as step-down in mode of respiratory support from baseline by end of treatment.
- Adverse effects on growth z-scores and Bayley-III neurodevelopment scores were analyzed and compared to a cohort of untreated controls.

Results

Figure 1

- 132 intubated infants treated with 1st PNS course
  - 69 (52%) extubated to NIV
  - 63 (48%) failed to extubate
  - 34 remain intubated

Figure 2

- 34 intubated infants treated with 2nd PNS course
  - 12 (35%) extubated to NIV
  - 22 eventually extubated to NIV
  - 11 eventually weaned to NC

- 18 infants on NIV treated with 2nd PNS course
  - 8 (44%) weaned to NC
  - 10 eventually extubated to NIV

Conclusions

- Compared to untreated controls, repeat dexamethasone treatment was associated with lower Bayley cognitive scores (76.7 vs 86.4) and motor scores (71.7 vs 84.6) but this association was no longer significant after adjusting for confounders.

- A second course of dexamethasone for BPD was less effective in weaning respiratory support compared to the initial course but was not associated with detrimental effects on growth or neurodevelopment.