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Title: *Long-term prednisolone therapy in preterm infants with severe bronchopulmonary dysplasia*

Abstract

OBJECTIVES: To assess the efficacy and safety of long-term prednisolone therapy in preterm infants with severe bronchopulmonary dysplasia (BPD).

METHODS: This single center retrospective cohort study utilized chart review to identify preterm infants who received ≥ 30 days of prednisolone therapy and analyze changes in weekly pulmonary severity scores (PSS) and anthropometrics.

RESULTS: Thirty-four infants (mean birth weight 846 ± 353 g; mean gestational age 26.5 ± 2.5 weeks) were identified. The average start of prednisolone treatment was at 107 ± 35 days of life; while median duration of prednisolone therapy was 57 (range 28-208) days with a mean steroid dose of 12.4 ± 3.1 mg/kg during week 1, 9.1 ± 2.8 mg/kg during week 2, 7.5 ± 2.7 mg/kg during week 3, and 6.2 ± 2.6 mg/kg during week 4. Weekly pulmonary severity scores were compared to baseline pulmonary severity scores. Across all weeks, a significant decrease from baseline in pulmonary severity scores occurred. Baseline pulmonary severity score was 1.3 ± 0.6. Scores were significantly decreased from baseline at day 7 (1.16 ± 0.62), day 14 (1.02 ± 0.5), day 21(0.98 ± 0.46), and day 28 (0.98 ± 0.49). Baseline z-score for weight was -1.21 ± 1.07. Weight z-score decreased after 7 days (-1.42 ± 1.01) and 14 days (-1.45 ± 1.03) of prednisolone therapy. Growth improvement was reflected in the following week's z-scores at 21 days (-1.37 ± 0.98) and 28 days (- 1.26 ± 1.02). Weight and head circumference had no statistically significant changes.

CONCLUSION: We identified prednisolone therapy in the treatment of severe BPD improved PSS and did not have a negative effect on anthropometric measures.