Postnatal Steroids for Treatment of Evolving BPD
East Bay Newborn Specialists Guideline
Updated by G Kinsey on 7/23/2018

On the basis of impaired CP free survival in infants at low risk for BPD; lack of clarity in the existing data regarding optimal corticosteroid, dose, duration, and timing of initiation; and possible short term complications, the routine use of postnatal steroids for prevention or treatment of BPD in VLBW infants is not recommended.

With data from Laughon et al demonstrating improved CP free survival in neonates at moderate to severe risk of BPD or death treated with postnatal steroids, likelihood of BPD should be evaluated in all infants <1250 grams requiring ventilator support at 14 days of life. This can be done utilizing the NICHD BPD calculator at https://neonatal.rti.org/index.cfm?fuseaction=bpdcalculator.start. Of note, the calculator may be used at earlier time points for assessment purposes to monitor evolution of risk. Equally of note, there is some data to suggest that predictability of BPD based on the calculator does not improve beyond 2 weeks.

In uninfected infants without hemodynamically significant PDAs and optimized fluid status who are calculated to have a $\geq$ 65% chance of moderate to severe BPD or death at 14 days of life, a trial of hydrocortisone should be considered to address evolving BPD if attempts at weaning mechanical ventilation have been unsuccessful. Avoid treatment with concurrent Indomethacin use.

Short and long-term risks and benefits of postnatal corticosteroids should be discussed with parents/guardians, and the discussion should be documented in the medical record.

The following 10 day course of hydrocortisone has been reported to have comparable outcomes to those following the lower dose regimen of dexamethasone used in the DART trial:

- 1.25mg/kg/dose q 6 hrs x 3 days
- 1.25 mg/kg/dose q 8 hrs x 3 days
- 1.25 mg/kg/dose q 12 hrs x 2 days
- 1.25 mg/kg/dose q 24 hrs x 2 days
- Stop

Active weaning of ventilatory support should commence early in the steroid course with a goal of extubation by course completion. Keep in mind, however, that the most recent Cochrane review from 2017 notes that significant improvement in successful extubation is seen at the 7th day of treatment with hydrocortisone, so do not stop the course if there is no improvement in the first couple days. Rather, consider extending the course if improvement is seen later in the course and clinical worsening is seen with cessation of hydrocortisone. IV and po dosing of hydrocortisone are equivalent.

Monitor for hypertension, hyperglycemia, sepsis, intestinal bleeding, and intestinal perforation. The dosage regimen may need to be modified or discontinued if a complication occurs.

If no improvement with hydrocortisone, still requiring significant ventilatory support, and >28wk PMA, consider dexamethasone via DART protocol after discussion with parents/guardians:

- 0.075 mg/kg/dose q 12 hrs x 3 days
- 0.05 mg/kg/dose q 12 hrs x 3 days
- 0.025 mg/kg/dose q 12 hrs x 2 days
- 0.01 mg/kg/dose q 12 hrs x 2 days
- Stop

References

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