ANTENATAL CORTICOSTEROID THERAPY

Respiratory morbidity including respiratory distress syndrome (RDS) is a serious complication of preterm birth. It is the primary cause of early neonatal mortality and is associated with long term lung complications and poorer developmental outcomes. The administration of antenatal corticosteroids to accelerate lung maturity in women who are at risk of preterm birth is strongly associated with decreased neonatal mortality and morbidity and should be considered routine practice. Neonates whose mother received antenatal corticosteroids have significantly lower incidence and severity of RDS, intracranial haemorrhage, necrotising enterocolitis and death compared with neonates whose mothers did not receive antenatal corticosteroids. The full effect of steroids occurs 24 hours after the second dose is given and lasts for between 7-10 days only.

INDICATIONS FOR ANTENATAL CORTICOSTEROIDS

1. A single course of corticosteroids between 24 to 34+6 weeks of gestation to pregnant women who are at risk of preterm birth within 7 days.
2. Periviability (22+5 to 23+6 weeks gestation) – corticosteroids should be considered if active intervention at birth is the shared decision after joint consultation with the obstetric team, neonatal team and the parents.
3. A single repeat dose of antenatal steroid should be considered in women who are less than 34+6 weeks of gestation who are at risk of preterm birth within 7 days and whose prior course of antenatal steroids was completed more than 7-10 days previously.
4. **Prior to elective caesarean section:**
   - If ≥ 35+0 weeks gestation there is insufficient evidence to support standard use of corticosteroids. (If there is *known* lung immaturity it may be considered as a single course of corticosteroids 48 hours prior to planned birth).
   - Evidence from systematic review and meta-analyses (Saccone 2016) and a Cochrane Review (Sotiriadis 2018), published since the 2015 Clinical Practice Guidelines "Antenatal Corticosteroids Given to Women Prior to Birth to Improve Fetal, Infant, Child and Adult Health" were released suggesting significant neonatal respiratory benefit when corticosteroids are given prior to elective caesarean section at 35+0 to 36+6 weeks and > 37+0 weeks. However, the GRADE quality of evidence was low (Sotiriadis 2018) indicating that the true effect of corticosteroids may be substantially different than the estimate of effect given, and no trials > 37+0 weeks included neonatal hypoglycaemia as an outcome, hence the potential for harm is unknown.

     Until further evidence is available to guide practice, avoid routine use of corticosteroids for women undergoing elective caesarean section ≥ 35+0 weeks gestation.[7, 8, 9]
   - Currently The C*STEROID Feasibility Study has been undertaken at CDHB. This is a randomised placebo-controlled trial of betamethasone prior to planned caesarean section at 35+0 to 39+6 weeks, assessing both neonatal benefit and harm. All women undergoing

caesarean section between 35+0 to 39+6 should be offered the opportunity to participate in the study.

PREGNANCY COMPLICATED BY DIABETES

Steroid therapy may deteriorate blood glucose control for at least 3 days after the final dose. Mothers with diabetes (pre-existing or gestational), should be admitted for steroid therapy and the protocol for 'insulin to cover steroid therapy' initiated to maintain good blood glucose control. There is insufficient evidence to support use of corticosteroids in patients with diabetes greater ≥ 35+0 weeks gestation, regardless of mode of delivery.

CORTICOSTEROIDS TREATMENT

1. Two doses of Betamethasone 11.4 mg given intramuscularly 24 hours apart (CDHB choice of steroid)
   or
2. Two doses of Dexamethasone 12 mg given intramuscularly 24 hours apart [6]

Treatment with steroids for less than 24 hours is still associated with significant reduction in neonatal morbidity and mortality. 1st dose of corticosteroids should be administered even if the ability to give 2nd dose of is unlikely. However, no additional benefit has been demonstrated for accelerated courses of steroids, i.e. giving the doses 12 hourly instead of 24 hourly so in practice do not give the second dose early where delivery is needed/anticipated, rather just give the single dose and only administer the second at the 24-hour mark if the woman remains undelivered.

CORTICOSTEROIDS REPEAT DOSES

1. When gestational age is ≤ 32+6 weeks.
2. Use a single repeat dose of Betamethasone 11.4 mg given intramuscularly
3. After this dose if a woman has still not given birth 7-10 days from the previous repeat dose and is still considered to be at risk of preterm birth within the next seven days, a further single repeat dose of Betamethasone 11.4 mg given intramuscularly, can be administered
4. Up to three single repeat doses can be given. However, if a woman remains at risk of preterm birth after receiving three repeat doses, discussion between the obstetric, neonatal teams and the parents should occur to weigh up the risks and benefits of further steroid doses.
5. In the absence of Betamethasone, we recommend Dexamethasone 12 mg.

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