**Guideline for the use of antenatal corticosteroids for fetal maturation**

The aim of this guideline is to provide up-to-date information on the appropriate use of antenatal corticosteroid therapy in women whose babies are at risk of complications owing to either preterm birth or elective caesarean section at term.

1. **Is the use of antenatal corticosteroids (ACS) an effective therapy?**

   Women at risk of preterm birth before 34 weeks’ gestation are routinely given a course of antenatal corticosteroids (ACS) because there is good evidence that treatment reduces neonatal death, respiratory distress syndrome (RDS) and intraventricular hemorrhage (IVH), necrotizing enterocolitis (NEC), respiratory support and intensive care admission.

2. **Who are candidates for antenatal corticosteroid therapy?**

   Antenatal administration of corticosteroid therapy would be indicated to all women at high risk of preterm delivery between 24 and 34 weeks of gestation. Antenatal corticosteroids should be given to all women for whom an elective caesarean section is planned prior to 38 weeks of gestation.

3. **Is there benefit after 34 weeks’ gestation?**

   Antenatal steroids could also be indicated over 34 weeks of gestation when there is evidence of pulmonary immaturity.

4. **Which are the optimal steroids; what is the ideal dose and route of administration?**

   Betamethasone as the steroid of choice, when available, to be given in a course of two doses of 12 mg administered intramuscularly 24 h apart. An alternative regimen would be four doses of 6 mg dexamethasone intramuscularly every 12 h.

5. **How long after administration is a course of antenatal corticosteroids most effective?**

   Antenatal corticosteroids are most effective in reducing RDS in pregnancies that deliver 24 hours after and up to 7 days after administration of the second dose of antenatal corticosteroids. Antenatal corticosteroid use reduces neonatal death within the first 24 hours and therefore should still be given even if delivery is expected within this time.

6. **What is the mechanism of action?**

   Antenatal corticosteroid therapy results in accelerated morphologic development of type 1 and type 2 pneumocytes. Type 1 pneumocytes are responsible for gas exchange in the alveoli, while type 2 pneumocytes are responsible for production and secretion of surfactant. For these changes to occur, however, the lungs need to have reached a stage of development that is biologically responsive to corticosteroids.

6. **How safe is the use of antenatal corticosteroids?**

   Women may be advised that the use of a single course of antenatal corticosteroids does not appear to be associated with any significant short-term or long maternal or fetal adverse effects.
7. Are there any contraindications to the use of antenatal corticosteroids?

ACS therapy would be contraindicated in maternal systemic infections including tuberculosis. In women with chorioamnionitis caution is advised.

8. Are antenatal corticosteroids indicated in women with premature rupture of membranes (PROM)?

ACS therapy is indicated in women with PROM from 24 to 32 weeks’ gestation not presenting clinical signs of chorioamnionitis. Beyond 32 weeks of gestation, the risk of chorioamnionitis is higher than the risks derived from prematurity.

9. What is the role of antenatal corticosteroids in women with diabetes mellitus?

Diabetes mellitus is not a contraindication to antenatal corticosteroid treatment for fetal lung maturation. Women with impaired glucose tolerance or diabetes who are receiving fetal steroids should have additional insulin according to an agreed protocol and be closely monitored.

Caution is advised during ACS administration with close glycemic control during three days after the first dose. The steroid effect begins approximately 12 h after the first dose and lasts for five days.

10. What is the role of antenatal corticosteroids in pregnancies with fetal growth restriction?

Pregnancies affected by fetal growth restriction between 24 and 35 weeks of gestation at risk of delivery should receive a single course of antenatal corticosteroids.

11. When should an antenatal course of corticosteroids be repeated?

A rescue course of two doses of 12 mg betamethasone or four doses of 6 mg dexamethasone should only be considered with caution in those pregnancies where the first course was given at less than 26 weeks of gestation and another obstetric indication arises later in pregnancy. Weekly repeat courses are not recommended.

Animal studies and observational studies in humans have suggested that repeat courses reduce the occurrence and severity of neonatal lung disease but multiple courses of steroids may lead to possible harmful effects including growth delay, brain developmental delay, lung development problems, necrotising enterocolitis, maternal and neonatal sepsis, adrenal gland insufficiency and placental infarction.