

GLYCAEMIC CONTROL DURING & AFTER STEROID ADMINISTRATION FOR PROMOTION OF FETAL LUNG MATURITY

Administration of antenatal steroids for fetal lung maturity is considered for all women at risk for preterm birth up to 35+6 weeks. Administration of steroids may result in a deterioration of glycaemic control for 2- 3 days. This should be anticipated and actively managed.

- ❗ Target blood glucose: 4-7.8 mmol/L pre and post-meal.
- ❗ Check CBG every hour whilst on Variable Rate Intravenous Insulin Infusion (VRIII/Sliding scale)
- ❗ When managing any patient with diabetes who is pregnant always refer to local guidance and discuss with the local specialist diabetes and obstetric teams

Options	Description	✔ Advantages	✘ Disadvantages
Dose adjustment of usual insulin regimen based on blood glucose levels	<p>Insulin algorithm by Mathiesen and colleagues; Betamethasone 12 mg was given and repeated 24 hours later.</p> <ul style="list-style-type: none"> • Day 1 (the day of first betamethasone injection), the night insulin dose increased by 25% • Day 2, all insulin doses increased by 40% • Day 3, all insulin doses increased by 40% • Day 4, all insulin doses increased by 20% • Day 5, all insulin doses increased by 10–20% (all compared to pre-steroid doses) • Days 6 and 7, insulin doses reduced to pre-steroid doses 	<ul style="list-style-type: none"> • Most often patients can self-manage their insulin dosing • Less intense input from staff 	<p>Substantial individual variation and difficulty to achieve and maintain tight glycaemic control (4-7 mmol/L)</p>
VRIII	<ul style="list-style-type: none"> • With the first dose of steroids, start intravenous insulin infusion (VRIII) • (50 units human soluble [Humulin® S] insulin or Actrapid® insulin made up to 50 ml with 0.9% NaCl). • Basal insulin needs to be continued as usual. • Stop meal time insulin • Substrate fluid: 0.9% NaCl with 5% glucose and 0.15% KCl (20 mmol/L) or 0.3% KCl (40 mmol/L) with i.v. insulin to avoid hypoglycaemia, hyponatraemia and hypokalaemia. • The rate of substrate infusion should take into account the volume status but generally 50 ml/hr would be reasonable. Senior review if risk of fluid overload. • Intravenous insulin may be needed until 24 hours after the administration of the second dose of steroids. <p>See Appendix 1 of JBDS guidelines for insulin infusion algorithm</p>	<ul style="list-style-type: none"> • VRIII is considered the most effective way to control steroid-induced hyperglycaemia in pregnancy 	<ul style="list-style-type: none"> • Check U+Es prior to starting VRIII to monitor fluid balance and electrolyte abnormalities. Repeat • 24 hourly. • VRIII requires more intensive input from the midwifery staff. • Staff should be trained in safe use of VRIII. • Midwives should have at least two hours of training and yearly updates on managing VRIII
Insulin pump /CSII	<ul style="list-style-type: none"> • Women on insulin pump therapy may be able to safely maintain glycaemic control following • steroid administration by use of correction boluses and temporary basal rate increases. <p>In general</p> <ul style="list-style-type: none"> • approximately 40% increase in insulin doses may be needed. 	<ul style="list-style-type: none"> • Most often patients can self-manage their insulin dosing • Less intense input from staff 	<p>If optimal glycaemic control cannot be achieved (e.g. 2 consecutive blood glucose readings > 7.8 mmol/L) VRIII may need to be considered. Switch off insulin pump for future use.</p>