This is a general guideline and does not represent a professional care standard governing providers’ obligations to patients. Care is revised to meet individual patient needs. This is a quality improvement document and should not be part of the patient’s medical record.

**UNC PICU Propofol Continuous Infusion Guideline for use during Mechanical Ventilation**

**Note:** If using propofol to provide detoxification of long-term narcotics, consider a Pain Team Consult to guide this therapy.

Propofol is an alkylphenol IV sedative-hypnotic agent used for the induction and maintenance of anesthesia as well as continuous sedation for mechanically ventilated patients in the intensive care unit. However, propofol is not without adverse effects, such as pain on injection, apnea, and hypotension. One serious adverse event is propofol-related infusion syndrome or propofol infusion syndrome (PRIS), a constellation of signs and symptoms, including bradycardia, metabolic acidosis, liver enlargement, lipemic plasma, rhabdomyolysis and/or myoglobinuria, and even death. Given the seriousness of this complication this guideline was created to provide a framework to limit the development of and monitor for the onset of PRIS given recognition and discontinuing the infusion is the first stage and only treatment.

Patient Selection: Propofol can be considered as a sedative option for all patients but ideally for very short term need for sedation without the following relative contraindications.

Relative Contraindications:
1. Age less than 2 months
2. Documented or suspected mitochondrial disorder
3. Severe Brain injury
4. Requiring catecholamine infusions
5. Preexisting severe metabolic acidosis
6. Requiring Glucocorticoids
7. Pancreatitis

Dosing Recommendations: max dose of 70 mcg/kg/min (4 mg/kg/hr)

Duration of therapy: max duration 24 hours

Monitoring:
At time of initiation:
- Place on continuous ECG monitoring and continuous pulse oximetry and end tidal CO2 monitoring
- Ideally continuous blood pressure monitoring, if no arterial line, then blood pressure q15 minutes for first hour and q1 hour after initiation
- 12 lead ECG
- Blood gas with lactate and electrolytes (potassium)
- CK
- Triglyceride

Ongoing monitoring:
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- Continuous ECG
- Continuous pulse oximetry
- ETCO2
- Blood pressure q 1 hour (and after any bolus)
- Q6 hour blood gas (preferably ABG or VBG free flowing sample)
- Q12 hour –
  o 12 lead ECG
  o Creatine kinase
  o Physical exam to document presence/absence of hepatomegaly
  o Triglyceride level
- Presence of green urine can occur with propofol use. Its presence does not correlate with the development of PRIS, however consider checking labs when noted to evaluate for PRIS.

Concurrent Therapy:
1- Propofol inhibits fatty acid oxidation which may be overcome by an adequate carbohydrate intake. It is recommended to provide a glucose infusion rate of 5-8 mg/kg/min. This could be achieved by providing D10 IVF at 1.5 x MIVF for patients greater than 10 kgs.
2- If the patient is on total parenteral nutrition it is recommended to discontinue the lipids while on the propofol infusion in order to limit the lipid load.
3- Both catecholamine and glucocorticoid administration are associated with the development of PRIS. It is recommended to discontinue these medications if possible while on propofol infusion or select an alternative sedative if they cannot be discontinued.

Indications for discontinuation:
1- Lactate level > 4 mmol/L or rise of > 1.5 mmol/L
2- CK level > 5000 unit/L
3- Triglyceride Level > 250 mg/dL
4- Extreme electrolyte abnormalities
5- Hepatomegaly on physical exam
6- Signs or symptoms concerning for anaphylaxis
7- ECG changes including:
   a. T wave inversion
   b. Widened ORS
   c. Prolonged QTc
   d. PVCs or PAC
   e. Any arrhythmias
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Reference:


Wolf et al. “Impaired fatty acid oxidation in propofol infusion syndrome” The Lancet Vol 357 February 24, 2001

Murphy et al. “Allergic Reactions to Propofol in Egg-Allergic Children” Anesth Analg (2011);113:140–4