

Protocol

Target Group: Physicians, Nurses	Original Date of Issue: 25/04/2017	Date of Last Review: 19/01/2020	Publication Date: 19/01/2020
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Purpose

1. To provide physicians and nurses at Cleveland Clinic Abu Dhabi (CCAD) with a standard protocol for using heparin to treat Venovenous Extracorporeal Membrane Oxygenation (VV-ECMO) patients.

Protocol

1. Ordering
 - 1.1. This protocol will be initiated by a physician order.
 - 1.2. Subsequent orders specified by the protocol will be entered by a nurse as 'per protocol'.
 - 1.3. Subsequent orders not specified in the protocol will require a physician order.
2. Heparin protocol
 - 2.1. This protocol is for VV-ECMO patients when lower range anticoagulation is desired.
 - 2.2. Initial bolus and infusion are weight based.
 - 2.2.1. Initial bolus is 60 units/kg to a maximum of 4000 units.
 - 2.2.2. Initial infusion is 12 units/kg/hour to a maximum of 1000 units/hour.
 - 2.3. Subsequent goal PTT is 40-60 seconds.
 - 2.4. The first PTT is obtained 6 hours after the initial infusion is started.
 - 2.5. Subsequent adjustments and Partial Thromboplastin Time (PTT) testing are based on the table below.
 - 2.6. Once 2 consecutive PTTs are within therapeutic range, repeat PTT daily.
 - 2.7. Notify MD for 2 consecutive PTTs <40 or >60 seconds.
 - 2.8. For PTT values >80 sec consider holding the infusion for 1 hour and decreasing the infusion by 4 units/kg/hour.
3. Adjustment Table

Heparin VV-ECMO Protocol

PTT Results (sec.)	Bolus	Infusion	Next PTT
<20	60 units/kg	↑4 units/kg	6 hours
20-39.9	30 units/kg	↑2 units/kg	6 hours
40-60	0	No change	6 hours
60.1-69.9	0	↓2 units/kg	6 hours
70-80	0 and hold infusion for 1 hour	↓4 units/kg	6 hours
>80	0 and call physician	Stop infusion and call physician	6 hours

Oversight and Responsibility

1. Quality & Patient Safety Institute
2. Pharmacy Department
3. Heart & Vascular Institute
4. Respiratory Institute
5. Critical Care Institute

Definitions

1. None

References

1. None

Institute / Department / Committee Involved in Protocol Development / Revision

1. Quality & Patient Safety Institute
2. Pharmacy Department
3. Heart & Vascular Institute
4. Respiratory Institute
5. Critical Care Institute

Contact for Questions / Clarifications

1. Critical Care Physician
2. Pharmacotherapy Specialist

Related or Supporting Documents

1. None

Abbreviations

2. VV-ECMO - Venovenous Extracorporeal Membrane Oxygenation
3. CCAD - Cleveland Clinic Abu Dhabi
4. PTT - Partial Thromboplastin Time