

**Institute / Department Protocol**

<b>Target Group:</b> All Physician and Nurse Caregivers Treating DVT , PE and VA-ECMO patients	<b>Original Date of Issue:</b> 29/04/2015	<b>Date of Last Review:</b> 03/07/2018	<b>Publication Date:</b> 03/07/2018
<b>Approved by:</b> Jeffrey Chapman, MD, Institute Chair, Respiratory and Critical Care Institute	<b>Date Last Approved:</b> 03/07/2018	<b>Prepared by:</b> Antoine Cherfan (Senior Director, Pharmacotherapy Services)	<b>Version Number: 3</b>

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**Purpose**

To provide physicians and nurses at Cleveland Clinic Abu Dhabi (CCAD) with a standard protocol for using heparin to treat patients with or with suspected Deep Venous Thrombosis (DVT), Pulmonary Embolism (PE) and Venous-Arterial Extracorporeal Membrane Oxygenation (VA-ECMO) or who need standard heparin anticoagulation.

**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 all patients with or with suspected DVT, PE or VA-ECMO where anticoagulation is desired.
  - 2.2. Initial bolus and infusion are weight based.
    - 2.2.1. Initial bolus is 80 units/kg to a maximum of 10,000 units.
    - 2.2.2. Initial infusion is 18 units/kg/hour to a maximum of 2000 units/hour.
  - 2.3. Subsequent goal Activated Partial Thromboplastin Time (aPTT) is 60-85 seconds or goal of heparin anti-Xa units of 0.3-0.7 units/ml.
  - 2.4. The first aPTT is obtained 6 hours after the initial infusion is started.
  - 2.5. Subsequent adjustments and aPTT testing are based on the table below.
  - 2.6. Once 2 consecutive aPTTs are within therapeutic range, repeat aPTTs daily.
  - 2.7. Notify MD for 2 consecutive aPTTs <60 or >85 seconds.
  - 2.8. For aPTT values >150 sec consider holding the infusion for 1 hour and decreasing the infusion by 4 units/kg/hour.
3. Adjustment table

aPTT Results (sec.)	Bolus	Infusion	Next aPTT
<32.4	80 units/kg	↑4 units/kg	6 hours
32.4-59.9	40 units/kg	↑2 units/kg	6 hours
60-85	0	No change	6 hours

## Heparin Deep Venous Thrombosis/Pulmonary Embolism/VA-ECMO Protocol - Institute Protocol

<b>85.1-106.9</b>	0	↓2 units/kg	6 hours
<b>107-150</b>	0 and hold infusion for 1 hour	↓3 units/kg	6 hours
<b>&gt;150</b>	0 and call physician	Stop infusion and call physician	6 hours

### **Oversight and Responsibility**

1. Quality & Patient Safety Institute
2. Respiratory & Critical Care Institute
3. Pharmacy Services Department

### **Definitions**

1. None

### **References**

1. Cleveland Clinic Unfractionated Heparin Adult Patients

### **Institute / Department / Committee Involved in Procedure Development / Revision**

1. Quality & Patient Safety Institute
2. Heart & Vascular Institute
3. Pharmacy Services Department

### **Contact for Questions / Clarifications**

1. Institute Chair, Respiratory and Critical Care Institute
2. Director, Pharmacotherapy Services

### **Related or Supporting Documents**

1. None

### **Abbreviations**

1. CCAD - Cleveland Clinic Abu Dhabi
2. aPTT - Activated Partial Thromboplastin Time
3. DVT - Deep Venous Thrombosis
4. PE - Pulmonary Embolism
5. VA-ECMO - Veno-Arterial Extracorporeal Membrane Oxygenation