



## ANTICOAGULATION PROTOCOL\*

### PHASE 1

Heparin 10 units/kg/hr.

When chest tube drainage falls to 50 ml/hr for two to three hours, with stable hematocrit and hemoglobin levels without transfusion of blood products, and coagulation factors (prothrombin time (PT), partial thromboplastin time (PTT), fibrinogen, and platelet count) approaching normal.

+Several centers use **low molecular weight dextran at 25 ml/hr** in the first 24-72 postoperative hours, instead of heparin. However, the use of dextran is controversial because its effectiveness and mechanism of action in VAD patients is unclear.

### PHASE 2

Increase heparin dose to maintain the PTT approximately 1.5 times control.

After at least 72 hours post-op when the risk of bleeding is diminished by the healing of raw surfaces and the repair of hemostatic abnormality associated with cardiopulmonary bypass.

### PHASE 3

Warfarin administration to maintain International Normalized Ratio (INR) range 2.5 to 3.5.

Once the patient is extubated, and tolerating oral medication, start warfarin (overlapping with heparin). Warfarin administration is similar to patients with a mechanical heart valve. After obtaining an acceptable INR, discontinue heparin or dextran.

Several centers administer **aspirin (80 mg) every day** for patients supported >30 days or for platelet counts >300 (TH/mm<sup>3</sup>) to help prevent platelet aggregation on the artificial surfaces.

**\*Significant drops in the hematocrit (Hct) and hemoglobin (Hgb) levels, possibly requiring blood transfusions, or the inability to stabilize Hct or Hgb levels may require modification of anticoagulation (i.e., lowering heparin or warfarin dosage, or discontinuing aspirin administration).**