BIVALIRUDIN

Suggested Guidelines for Use
University of Washington Medical Center Dept of Pharmacy

*****FOR PHYSICIAN USE ONLY*****
This is not intended as a nurse-managed protocol

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BACKGROUND:

Bivalirudin is a direct thrombin inhibitor. It is used as an alternative to heparin in patients undergoing percutaneous coronary intervention, and as an alternative anticoagulant in patients with heparin-induced thrombocytopenia (HIT). It has a short half life of 25 minutes and elimination is related to glomerular filtration. Like other antithrombotic agents, the primary adverse effect of bivalirudin is hemorrhagic complications. Like other direct thrombin inhibitors, there is no specific reversal agent for bivalirudin.

When used in the cardiac catheterization laboratory or for cardiopulmonary bypass , bivalirudin may be monitored by ACT, but does not require aPTT monitoring. However, when used for anticoagulation in the setting of HIT, bivalirudin is monitored using aPTT. The goal aPTT in seconds has been defined at UWMC/HMC as 60-80 seconds. Alternatively, it can be monitored with the direct thrombin inhibitor assay offered at UWMC/HMC. This assay has a therapeutic range of 60-90 seconds for bivalirudin (different for other DTIs).

Bivalirudin has a moderate effect on prothrombin time (PT/INR) at therapeutic doses. This complicates interpretation of INR results during concurrent bivalirudin and warfarin therapy. A valid INR can be obtained by holding bivalirudin for approximately 2 hours prior to checking INR ***(longer in renal impairment).***

PRIOR TO ADMINISTRATION

The following baseline information is required before bivalirudin can be administered

a. Baseline aPTT/PT
b. Baseline serum creatinine
c. calculated creatinine clearance [(140-age) x IBW/(72 x serum creatinine)] [x 0.85 in women]

STARTING DOSE *dosing is based on clinical indication and renal function*

	PCI	**HIT**
LOADING DOSE	0.75 mg/kg	Not loaded
INITIAL INFUSION FOR: Normal renal function	1.75mg/kg/hr for up to 4 hours	0.15 mg/kg/hr
Clcr 30-60 ml/min	same	0.08 mg/kg/hr
Cl cr < 30 ml/min	1.0 mg/kg/hr	0.05 mg/kg/hr
Dialysis	0.25 mg/kg/hr	0.02 mg/kg/hr

MONITORING

1. first aPTT/DTI assay check: 2 hours after initiation of therapy
2. subsequent checks
   - qam
   - 2 hrs after any change in dose
   - immediately prior to resuming therapy if infusion has been held
   - at any time if thromboembolism or hemorrhage are suspected

DOSING ADJUSTMENTS

APTT (primary testing)	**DTI Assay** (alternate testing)	**Dosing Adjustment**	**Written Orders**
< 60	< 60	increase infusion rate by 20%	*The order must define the dose change in mg/kg/hr and must be calculated by the physician writing the order*
60-80	60 - 90	NONE	
> 80	> 90	hold infusion for 1 hour, then restart at 50% lower rate	