

Heart Failure Protocol for the Outpatient Setting

Protocol Title: Diuretic Protocol for Heart Failure Patients with a Weight Gain of Greater than or equal to 4 pounds from Target Weight.

NOTE: Every patient with CHF must have a Target Weight established and documented in the EMR. For more information on TW please see www.mainehealth.org/hf

Protocol Statement: The protocol is designed to allow the office-based provider to safely titrate diuretics in the setting of weight gain caused by fluid retention. The protocol is initiated when the patient is greater than 4lbs from Target Weight and is judged to be fluid overloaded.

1. Labs: Have the patient go to the lab or have nurse draw baseline BMP and Magnesium level if not available within last 7 days. Repeat labs one day after start of activation and one week after completion of protocol. If K+ less than 3.7 during any part of this protocol, give potassium per K+ replacement protocol.
2. Medications: If the patient has a home health nurse, prescribe the Home Diuretic Protocol which will include an Urgent Diuretic Kit and the instructions below for nursing to follow. Contents of this kit will vary with the diuretic the patient is taking and the preference of the home health agency. Contents will include:
 - Metolazone 2.5 tabs
 - IV supplies
 - Furosemide injection or Bumetanide injection
 - Sterile saline flushes
3. If the patient does not have a visiting nurse, locate the closest infusion center in the event IV diuresis becomes necessary. Initiate Step A and B as appropriate prior to intravenous medications. If Step C is reached, contact the center and fax the orders below. If no infusion center is available, the patient will need admission. Consider discussing with on-call HF physician – call 662-4824; select option “2” to have MA page on-call provider.

Step A	<ul style="list-style-type: none"> • Double Daily oral loop diuretic dose or increase to maximum daily dose if doubled dose exceeds maximum. If already at maximum dose, then skip to Step B. (Max daily doses are: Furosemide 320mg; Bumetanide 10mg; Torsemide 200 mg) • If weight the next day is decreased ≥ 2lbs. continue increased diuretic dose until target weight is reached, then have patient resume usual dose of diuretic. Notify provider of outcome. • If weight the next day is decreased by < 2 lbs. continue increased diuretic dose and continue to Step B.
Step B	<ul style="list-style-type: none"> • Add Metolazone 2.5mg (if already on Metolazone 2.5mg daily maintenance dose, give additional 2.5mg for 5mg total) • If already taking 5mg of Metolazone daily then skip to Step C. • If weight the next day is decreased by ≥ 2 lbs. Continue increased diuretic dose plus Metolazone from step B until target weight is reached. When target weight is reached, have patient resume usual dose of diuretic. Notify the provider of outcome.

Over

	<ul style="list-style-type: none"> If weight the next day is decreased by < 2lbs discontinue all oral loop diuretics and continue to step C.
Step C	<ul style="list-style-type: none"> Administer IV loop diuretic: <ul style="list-style-type: none"> Furosemide 120mg, order to be given at 40mg/min Bumetanide 4mg, order to be given at 0.5-1mg/min If usual oral dose is BID, administer IV dose BID Continue Metolazone dose from Step B while administering the IV diuretic
Step D	<ul style="list-style-type: none"> If weight decreased by \geq 2 lbs. but not yet at target, continue IV medication per step C until target weight is reached. When the target weight is reached, adjust home diuretic dose to maintain euvolemia. If patient was previously on furosemide consider a change in diuretic per recommendation below. If target weight not reached after 3 days IV diuretics, consider admission. If after 24 hours with IV medication weight not decreased by \geq 2lbs consider admission.

For patients who have demonstrated poor response to furosemide, consider a change in diuretic. Consider changing to torsemide or bumetanide for better oral bioavailability (80-100%). Suggested conversion:

Furosemide doses below left correspond to Torsemide and Bumetanide doses below:		
Furosemide	Torsemide	Bumetanide
20 mg	10 mg	0.5 mg
40 mg	20 mg	1 mg
60 mg	30 mg	1.5 mg
80 mg – 100 mg	40 mg	2 mg

Potassium Replacement by Level of Kidney Function*

Please note, these doses are in addition to the patient’s baseline dose of potassium chloride.

	Creatinine > 2 mg/dl	Creatinine \leq 2 mg/dl
K \leq 3.0 - Notify Provider	40 mEq bid	40 mEq tid (or 60 mEq bid)
K 3.1-3.3	20 mEq bid	20 mEq tid (or 40 mEq AM and 20 mEq PM)
K 3.4-3.6	20 mEq daily	20 mEq bid (or 40 mEq daily)

* excerpted from Protocol Title: Heart Failure RN Protocol for Potassium Level < 3.7 ; Prelim approved 10/1/19 by MH CHAT Team