

MARKERS FOR ADVANCED HEART FAILURE

CLINICAL (Meeting any one of the these criteria)

Persistent symptoms of heart failure

New York Heart Association (NYHA) class III or IV

2

or more hospitalizations for acute or chronic decompensated heart failure exacerbation in the **last 12 months**

Systolic blood pressure

<90 mmHg

Intolerance to guideline-directed medical therapy



Episodes of pulmonary or systemic congestion requiring high-dose diuretics



furosemide ≥ 160 mg/day, torsemide ≥ 80 mg/day or bumetanide ≥ 4 mg/day



Episodes of low cardiac output requiring **inotropes** or **vasoactive drugs**

Refractory

angina

or ventricular

arrhythmias

Severe exercise capacity impairment: low 6 minute walk distance (**< 360 m**), peak exercise oxygen consumption (**$PVO_2 < 14$ mL/kg/min**), **$PVO_2 \leq 55\%$** of predicted for age or minute ventilation/carbon dioxide (**VE/VCO_2 slope > 40**)

LABORATORY (Meeting any one of the these criteria)

Creatinine

≥ 1.6 mg/dl

or GFR

<45 ml/min

BNP

≥ 500 pg/mL

or NT-proBNP

≥ 1000 pg/mL

Albumin

<3.5 g/dl

Progressive hyponatremia

<133 mEq/L



Abnormal liver function test attributed to hepatic congestion and/or hypoperfusion

IMAGING

LVEF

$\leq 35\%$

Infiltrative or restrictive

cardiomyopathies

Moderate to severe

mitral and/or tricuspid regurgitation

RISK SCORE DATA

Seattle Heart Failure Model (**SHFM**) one year predicted survival

$\leq 80\%$

Meta-Analysis Global Group in Chronic (**MAGGIC**) Heart Failure Risk Score one year predicted survival

$\leq 80\%$

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