

MAP goal \geq 65 mmHg

- Cirrhosis pt may be better suited for lower MAP goal of \geq 55 mmHg at times
 - Monitor measures of perfusion/organ function if using lower MAP goal
 - Mentation, UOP, lactate
- MAP measured on BP cuff is most accurate, SBP and DBP are calculated from MAP reading
- Arterial line is the most accurate, but painful procedure. Try to avoid unless pt will need frequent blood draws and/or ABGs
 - Make sure art line waveform is appropriate
 - If variation in art line waveform size potentially still fluid responsive
 - Troubleshooting links
 - [Arterial lines monitoring and management](#)
 - [Well, I'll be Damped – How Square Wave Testing Can Assure Accuracy in Your Hemodynamic Monitoring Interpretations](#)
 - Fluid resuscitate appropriately, but don't hold off on starting pressors to continue fluid boluses - better outcomes with early pressor initiation. Lots of pts shouldn't get 30cc/kg at our hospital, fluid overload becomes huge issue and can lead to pulm edema, and likely renal/electrolyte issues later on

**When using pressors use a large peripheral IV(18g), or consider midline or PICC placement if central can't be placed emergently)*

Pressor choices: ([pressor table](#))

1) Norepinephrine (Levophed) - typical range 1-15 mcg/min

- Use first unless:
 - Uncontrolled afib w/ RVR or tachyarrhythmia
 - First-line instead = phenylephrine (Neosynephrine)
- Data shows fewer adverse events than dopamine, unclear advantage over others

2) Vasopressin

- Typical adjunct to norepinephrine
- Splanchnic vasoconstriction especially helpful in cirrhosis pt
- Watch for digit ischemia
- Typically use 0.04 on/off dosing, no titration (but sometimes see weaning by 0.01s)

3) Phenylephrine

- If already on high dose norepi will not add much (alpha receptors already full)
- A good choice to switch to if uncontrolled afib with RVR on norepi (although tx afib might also help your pressures)
- Dosing in 100 mcg segments, good for push dose (neo stick contains 1000 mcg)
 - So 1mL of the 1000mcg/10mL "stick" is a typical dose lasting 3-5 minutes

4) Epinephrine - typical range 1-10 mg/min

- Gives more cardiac contractility

- Better 3rd line addition in high norepinephrine use
- If you're getting to 3rd line vasopressors, high splanchnic vasoconstriction can cause bowel ischemia, keep an eye out for this
- Can cause lactate elevation with use, don't chase number

5) Dopamine - typical range 1-10 mcg/kg/min

- Not used often
 - If you need contractility and vasoconstriction use epi
 - If you need contractility with afterload reduction use dobutamine
- Use for severe bradycardia when pacing is not available/indicated
- Can offset low HR/BP caused by precedex

6) Dobutamine - typical range 1-8 mcg/kg/min

- Cardiac contractility (if pt gets too tachy, lower dose)
- Can pair with nitro gtt for further afterload reduction
- May give some BP benefit but don't push contractility + vasoconstriction too far on a struggling heart

Other considerations for Blood Pressure support

1. Replacing calcium
 - a. Ionized calcium should be kept above 1
 - b. Replacement protocol in ICU allows the nurse to control
2. Midodrine
 - a. If unable to get off small amount of pressor consider starting midodrine 10mg q6hrs- little risk
 - i. Range 5-20mg q6-8h
 - ii. The suggestion "use 4h before HS" is to avoid postural hypertension when lying flat, non-issue for persistently hypotensive pts
 - b. May get a person out of ICU 1 day earlier and open up a much-needed bed
3. Stress dose steroids
 - a. If pt on chronic steroids (>20mg/d pred equivalent)
 - b. 50mg IV hydrocortisone or equivalent q6h
 - c. [Steroid Conversion Calculator](#)