Franciscan Missionaries of Our Lady HEALTH SYSTEM

Terlipressin (TERLIVAZ) In Hepatorenal Syndrome with Acute Kidney Injury Criteria for Use

The following recommendations are based on review of evidence-based trials, physician and pharmacist input, and expert opinion. The intent of this document is to be used to guide treatment, improve quality patient care, and maximize cost-effective medication prescribing using evidence-based medical decisions.

Dosing strategy is as follows:
Days 1-3: Terlipressin 0.85 mg intravenous push every 6 hours for 3 days
Days 4-14: If SCr has decreased by greater than or equal to 30% from baseline: Terlipressin 0.85 mg intravenous push every 6 hours for 11 days
OR
Days 4-14: If SCr has decreased by less than 30% from baseline: Terlipressin 1.7 mg intravenous push every 6 hours for 11 days

****Cases where terlipressin will be utilized will be reviewed monthly with presentation by ordering physician****

Exclusion Criteria

If the patient meets ANY criteria listed below, the patient will **NOT** receive terlipressin due to lack of patient benefit in clinical trials.

***If any of the above exclusion criteria are met while a patient is receiving terlipressin, the order will be automatically discontinued by pharmacy**

- ☐ Acute-on-chronic liver failure grade 3 with three of the following:
  - Bilirubin > 12mg/dL
  - Serum creatinine ≥ 3.5mg/dL or renal replacement therapy
  - Encephalopathy grade 3-4
  - INR ≥ 2.5
  - Vasopressor initiation (norepinephrine or vasopressin)
  - Intubation
- ☐ Serum creatinine > 5mg/dL
- ☐ Listed for liver transplant with a MELD ≥ 35

- ☐ History of underlying chronic cardiovascular conditions defined as (unstable angina, congestive heart failure requiring increasing doses of drug therapy, persisting symptomatic peripheral vascular disease), cerebrovascular, or ischemic disease
- ☐ Pulmonary edema on imaging
- ☐ SpO_2 < 90%
- ☐ Admission to the Intensive Care Unit

Inclusion Criteria

ALL of the following criteria must be met prior to initiation of terlipressin:

- ☐ Hospitalized **inpatient** not in an Intensive Care Unit
- ☐ Documented non-response to volume expansion with *strict intake and output* ordered consisting of volume expansion with 25 gm of 25% IV albumin q8h for 48 hours prior terlipressin initiation
- ☐ Must be ordered by a nephrologist
- ☐ Documented diagnosis of hepatorenal syndrome with acute kidney injury by nephrologist
- ☐ Pharmacy consultation for continued monitoring of terlipressin with automatic discontinuation based on specified criteria

Supplemental Information

The supplemental information listed below is intended to aid in further decision making and provide definitions for the inclusion and exclusion criteria listed.

Section	Criteria	Consideration Points
Exclusion Criteria	Acute-on-chronic liver failure grade 3 (Bilirubin > 12mg/dL, Serum creatinine ≥ 3.5mg/dL or renal replacement therapy, Encephalopathy grade 3-4, INR ≥ 2.5, Vasopressor initiation, Intubation)	Criteria adapted from the CONFIRM trial protocol
Inclusion Criteria	Hospitalized **inpatient** not in an Intensive Care Unit	There is currently insufficient evidence to support the use of terlipressin as an outpatient medication. There are instances of its use for as a bridge to liver transplantation. At this time, only requests for inpatient use will be considered.

		Terlipressin may be given via a peripheral line in the non-ICU setting. Should a patient need escalation of care to an intensive care unit, terlipressin will be automatically discontinued.
	Documented diagnosis of hepatorenal syndrome with acute kidney injury made by a nephrologist	Due to the complexity of a definitive hepatorenal syndrome with acute kidney injury (HRS-AKI) diagnosis, there is reasonable consideration for use of terlipressin with a *potential* or working diagnosis of HRS-AKI. "Therapeutic trials" of terlipressin with an uncertain diagnosis are **not** recommended
	Documented initial non-response to volume expansion with *strict intake and output* ordered (e.g. albumin)	Non-response will be defined as lack of improvement in urine output to non-oliguric status or stabilization of creatinine 25g of Albumin 25% may be initiated along with terlipressin
Miscellaneous	Pharmacy consultation	Upon ordering of terlipressin, pharmacy will be automatically consulted to monitor use. Terlipressin will be discontinued if: • A patient fails to meet inclusion criteria OR meets exclusion criteria • Scr is at or above baseline value on day four (indicating lack of benefit) • Maximum of 14 days of therapy has been met

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Terlipressin Order Set

Labs
[x] BMP, now and every 24 hours x 5 days

Nursing Communication Orders
[x] Assess oxygenation prior to initiating terlipressin
[x] Contact provider for development of chest pain
[x] Notify Physician (Standard Adult Parameters), Routine, Until Discontinued
Diastolic Blood Pressure greater than 110
Systolic Blood Pressure greater than 180
Heart Rate greater than 120
Respiratory Rate greater than 25
Respiratory Rate less than 8
Temperature greater than 38.3
SpO2 less than 90

Other Procedures
[x] Post-Administration vitals Q1H X 2 hours, followed by Vital signs, routine, per unit routine

Medication Orders
[x] Days 1-3: Terlipressin 0.85 mg intravenous push every 6 hours for 3 days
Admin instructions: Slow IV push over 2 minutes. Flush line after administration.
[ ] Days 4-14: If SCr has decreased by greater than or equal to 30% from baseline: Terlipressin 0.85 mg intravenous push every 6 hours for 11 days
Admin instructions: Slow IV push over 2 minutes. Flush line after administration.
[ ] Days 4-14: If SCr has decreased by less than 30% from baseline: Terlipressin 1.7 mg intravenous push every 6 hours for 11 days
Admin instructions: Slow IV push over 2 minutes. Flush line after administration.

Consults
[x] Consult to pharmacy – Assist with terlipressin therapy - selection of day 4-14 dose, discontinuation of terlipressin therapy as appropriate per therapy criteria and recommendations on any current nephrotoxic medications to discontinue