COHESIVE HEALTHCARE MANAGEMENT & CONSULTING

Mangum Regional Medical Center

TITLE		POLICY
IV Drips and Titration Parameters		**DRM-060**
MANUAL	EFFECTIVE DATE	REVIEW DATE
Drug Room	**10-1-2020**	**10-1-2020**
DEPARTMENT	REFERENCE	
Drug Room		

SCOPE

This policy applies to all adult patients receiving care and treatment at Mangum Regional Medical Center.

PURPOSE

The purpose of this policy is to develop a framework for the ordering, initiation and titration of vasoactive and sedative Intravenous (IV) medications administered as IV continuous drips.

DEFINITION

Vasoactive medication: has the effect of either increasing or decreasing blood pressure and/or heart rate through its vasoactivity (i.e. affects blood vessels).

Titration parameters: process of determining the optimal dose of a medication that reduces a patient's symptoms effectively while avoiding as many side effect(s) as possible associated with a medication.

POLICY

Vasoactive and sedative medications administered as a continuous IV infusions play a vital role in supporting critical care patients and prompt titration of these agents is essential. The rate and frequency of dose titration is dependent upon the patient's individual hemodynamic parameters and response to therapy. Prompt titration is best accomplished by the bedside nurse with continuous monitoring to parameters specified in medication orders by the ordering provider.

PROCEDURE

1. The on-duty provider shall enter an order for a vasoactive or sedative IV continuous drip with an initial starting dose, titration parameters, and targeted goal of medication therapy.
    a. The rate and frequency of dose titration is dependent upon the patient's hemodynamic parameters, clinical status, and response to treatment.

    b. Rate and dose titrations shall be guided by the "Titration Dose Increment" and "Rate of Titration's columns of Table 1.
2. The patient's nurse will document each dose increase or decrease in the patient's medical record.
    a. Vital signs will be monitored at least hourly for patient(s) on any vasoactive or sedative IV continuous drip.
    b. Vital signs will be monitored and documented within 15 minutes after each rate change while on a continuous IV infusion.
        i. If the patient requires frequent or emergent dose titration, the patient will have continuous or cycled monitoring of vital signs.
        ii. Vital signs and rate will then be documented at least every 15 minutes until vital signs are stable.
3. If the dose of any vasoactive or sedative medication reaches the maximum ordered dose as defined in Table 1, the on-duty provider must be notified. He or she should consider additional medication(s) or order a trial dose escalation.
4. When additional IV drips are ordered subsequent to the initial vasoactive or sedative medication, the following titration will occur:
    a. The initial medication(s) will remain at the current rate
    b. Subsequent vasoactive or sedative medication(s), except vasopressin, will be titrated up according to the "Titration Dose Increment" and "Rate of Titration" columns of Table 1
    c. If vasopressin is ordered by the on-duty provider, it will be initiated at the "Typical Starting Dose" listed in Table 1 or per the provider's order, and the dose will not be titrated up without an order by the on-duty provider
5. Initiation of weaning the vasoactive medication(s) to off occurs after the patient maintains their blood pressure at goal for 1-2 hours or as directed after other therapies are begun.
    a. Vasoactive and sedative infusions will be titrated off in the reverse order as they were started unless directed by the on-duty provider.
    b. Vasoactive and sedative infusions will be weaned off as indicated in the "Titration Dose Increment" and "Rate of Titration" columns of Table 1 based on reverse order of initiation.

REFERENCES

Overgaard CB, Dzavik V. Inotropes and vasopressors: review of physiology and clinical use in cardiovascular disease. *Circulation*. 2008;118:1047-1056.

Ellender TJ, Skinner JC. The use of vasopressors and inotropes in the emergency medical treatment of shock. *Emerg Med Clin North Am*. 2008;26:759-786, ix.

ATTACHMENTS

Table 1: Vasoactive and Sedative Medication Titration Table
Attachment A: Dosing Instructions for Vasoactive and Sedative Medications

REVISIONS/UPDATES

Date	Brief Description of Revision/Change

Table 1: Vasoactive and Sedative Medication Titration Table

Medication	Typical Starting Dose	Titration Dose Increment	Rate of Titration	Targeted Goal of Therapy	Max Ordered Dose: Notify Provider if reached
Dexmedetomidine	0.2 mcg/kg/hr	0.1 mcg/kg/hr	30 minutes	RASS 0 to -2	1.5 mcg/kg/hr
Diltiazem	5 mg/hr	2.5 mg/hr	30 minutes	HR < 120	15 mg/hr
Dobutamine	2 mcg/kg/min	2.5 mcg/kg/min	15 minutes	MAP > 65 or SBP > 90	15 mcg/kg/min
Dopamine	5 mcg/kg/min	5 mcg/kg/min	15 minutes	MAP > 65 or SBP > 90	20 mcg/kg/min
Epinephrine	0.05 mcg/kg/min	0.05 mcg/kg/min	15 minutes	MAP > 65 or SBP > 90	2 mcg/kg/min
Fentanyl	25 mcg/hr	12.5 mcg/hr	15 minutes	Pain at ___ or less per FLACC scale	150 mcg/hr
Labetalol	10 mg/hr	10 mg/hr	15 minutes	SBP < 140 mmHg	120 mg/hr
Lidocaine	1 mg/min	1 mg/min	15 minutes	Stabilization of cardiac arrhythmia	4 mg/min
Midazolam	3 mg/hr	1 mg/hr	15 minutes	RASS 0 to -2	10 mg/hr
Nicardipine	5 mg/hr	2.5 mg/hr	15 minutes	SBP < 140 mmHg	15 mg/hr
Nitroglycerin (mcg/min)	10 mcg/min	10 mcg/min	15 minutes	SBP < 140 mmHg	200 mcg/min
Nitroglycerin (mcg/kg/min)	0.2 mcg/kg/min	0.5 mcg/kg/min	15 minutes	SBP < 140 mmHg	3 mcg/kg/min
Norepinephrine (mcg/min)	0.5 mcg/min	1 mcg/min	15 minutes	MAP > 65 or SBP > 90	12 mcg/kg/min
Norepinephrine (mcg/kg/min)	0.1 mcg/kg/min	0.1 mcg/kg/min	15 minutes	MAP > 65 or SBP > 90	2 mcg/kg/min
Phenylephrine	0.25 mcg/kg/min	0.25 mcg/kg/min	15 minutes	MAP > 65 or SBP > 90	5 mcg/kg/min
Propofol	5 mcg/kg/min	5 mcg/kg/min	5 minutes	RASS 0 to -2	50 mcg/kg/min
Vasopressin	0.04 units/min	Do not titrate; Wean off by 0.01 units/min	For weaning: 30 minutes	MAP > 65 or SBP > 90	N/A