Hemodialysis: Warfarin Protocol

Site Applicability

PHC Community Hemodialysis (HD) Units (Metro and Coastal Community Dialysis Units)

Practice Level

Specialized: Nurses (RNs and LPNs) who have completed the required education and provide nursing care in a PHC Renal Community HD unit.

Requirements

A patient specific prescriber order is required for the initial dose and for RNs and LPNs to titrate warfarin as per the attached protocols with the specific INR target range specified in the order.

A patient specific physician order is required for warfarin titration that falls outside of the attached protocols.

Need to Know

The hemodialysis unit physician provides the warfarin prescription to patient.

Protocol

Nurse will review the INR result and follow the nomogram. (See Appendix A.)

Nurse to confirm the current warfarin regimen with patient prior to adjusting the dose based on the dosing nomogram.

Consult unit nephrologist during regular working hours or pharmacist during regular scheduled hours if any discrepancies arise.

Consult nephrologist on call for all other times.

Assessment

Nurse will assess for any signs and symptoms of bleeding.

Prior to adjusting the dose, nurse will ask the patient if any new medications have been started or stopped, including herbal products, over the counter (e.g. Tylenol) or nutritional supplements. Nurse to ask regarding any changes to appetite or changes to diet.

Interventions

Nurse to contact physician immediately if patient has any signs and symptoms of bleeding.

Nurse to message the renal pharmacist via message center if there are any new or discontinued medications, including herbal or nutritional supplements or changes in appetite/diet. Then continue dosing the warfarin based on the nomogram for that specific INR drawn.

Documentation

Nurse to complete the Cerner "Anticoagulation Monitoring Log" with each INR measurement and result.

Document under the following fields: Result Date, INR, Dose Taken Pt Confirmed, Recommended Dose, Recommended By, Contact Date, and Communication Method.

Document under Next Check, and Notes as applicable.

Make a note in Team Communication as appropriate.

Patient and Family Education

Educate patient and family on signs and symptoms of bleeding.

Educate patient and family to report signs and symptoms of bleeding and whenever there are any medication changes, including over the counter or herbal medications.

References

1. Defoe K, Wichart J, Leung K. Time in Therapeutic Range Using a Nomogram for Dose Adjustment of Warfarin in Patients on Hemodialysis With Atrial Fibrillation. Can J Kidney Health Dis. 2021 Sep 16;8:20543581211046079. doi: 10.1177/20543581211046079. PMID: 34552757; PMCID: PMC8450544.
2. Thrombosis Canada. Thrombosis Canada Clinical Guides Warfarin: management of out-of-range INRs, Version 2018 June 15. Thrombosis Canada; 2018.
3. Thomson BK, MacRae JM, Barnieh L, Zhang J, MacKay E, Manning MA, Hemmelgarn BR. Evaluation of an electronic warfarin nomogram for anticoagulation of hemodialysis patients. BMC Nephrol. 2011 Sep 26;12:46. doi: 10.1186/1471-2369-12-46. PMID: 21943221; PMCID: PMC3189863.

Appendices

Appendix A – Warfarin Dosing Nomogram

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Warfarin dosing nomogram			
INR Target Range		Action	Repeat testing
2 to 3	2.5 to 3.5		
Less than 1.4	Less than 1.7	Increase dose by 1 mg po daily	Repeat INR pre-HD on 2nd dialysis run
1.4 to 1.7	1.7 to 2.2	Increase dose by 0.5 mg po daily	Repeat INR weekly
1.8 to 3.2	2.3 to 3.7	No change	Continue current testing frequency
3.3 to 3.5	3.8 to 4	Decrease dose by 0.5 mg po daily	Repeat INR weekly
3.6 to 4	4.1 to 4.4	Decrease dose by 1 mg po daily	Repeat INR pre-HD on 2nd dialysis run
Greater than 4	Greater than 4.4	Evaluate for bleeding and call pharmacist/nephrologist for further INR and dosing adjustment orders	

Persons/Group Consulted:

Pharmacy and Therapeutics Committee

Renal Practice

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