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Maura Price RN, BSN, OCN

Lehigh Valley Health Network, Maura\_E.Price@lvhn.org

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# The Importance of Venous Thromboembolism Management in the Oncology Population

Maura Price MSN, RN, OCN  
Lehigh Valley Health Network, Allentown, Pennsylvania

## SIGNIFICANCE & BACKGROUND

- Venous thromboembolism (VTE) is defined as the development of a thrombus in the form of a deep vein thrombosis (DVT), a pulmonary embolism (PE), or a combination thereof (McCance et al., 2010).
- Due to the hypercoagulable state that occurs with malignancy, oncology patients are 4-7 times more likely to develop VTE than the general population
- VTE coupled with thrombocytopenia, a common toxicity experienced by patients undergoing chemotherapy or radiation, can make VTE management challenging
- Risks of anticoagulant administration versus anticoagulant holds during thrombocytopenia must be considered to ensure patient safety

## PURPOSE

To fill a gap in knowledge regarding proper anticoagulant dosing and administration in the thrombocytopenic oncology patient

## INTERVENTIONS

- A literature search was completed
- National guidelines for VTE management were reviewed and compared
- Guidelines were presented to Lehigh Valley Health Network's (LVHN) Cancer Committee
- Standard parameter for anticoagulant holds in the thrombocytopenic oncology patient was established
  - Unless contraindicated, anticoagulants can be safely administered to oncology patients with a platelet count of 50,000/ml or higher

Comparison of Risk Assessment Tools	
Assessment Tool	Population Validated In
Caprini Risk Assessment Model (RAM)	<ul style="list-style-type: none"> <li>• Surgical patients</li> <li>• Gynecologic oncology patients</li> </ul>
Padua Risk Assessment Model (RAM)	<ul style="list-style-type: none"> <li>• Hospitalized medical patients</li> </ul>
<i>Oncology specific</i> Multiple Myeloma Risk Assessment Model (RAM) (Thalidomide, Lenalidomide, Pomalidomide)	<ul style="list-style-type: none"> <li>• Multiple Myeloma patients</li> </ul>
<i>Oncology specific</i> Khorana Predictive Model for Chemotherapy-Associated VTE	<ul style="list-style-type: none"> <li>• Surgical patients</li> </ul>

Comparison of Guidelines & Current Recommendations					
	NCCN	MD Anderson	ASCO	MSKCC	ESMO
Relative Anticoagulation contraindications	Platelets <50,000/ml	Platelets <50,000/ml	Platelets <50,000/ml	*Platelets <25,000/ml	Platelets <50,000/ml
Absolute contraindications	Active bleeding- 2+ units transfused in 24 hours	Cerebral hemorrhage, hemorrhage in eye or vital organs, hgb drop of 2gm/dL in 24 hours	Platelets <20,000/ml		

Soiff, 2013; NCCN, 2016; Lyman et al., 2015; Mandala, Falanga & Roila, 2011.

## EVALUATION

- Education on VTE management in the oncology population was assigned to inpatient oncology nurses via LVHN's online learning system
- Nurses have voiced their appreciation for the education, review of guidelines, and establishment of a standard parameter for anticoagulant holds
- The education has led to decreased confusion over when to administer versus hold anticoagulants during thrombocytopenia

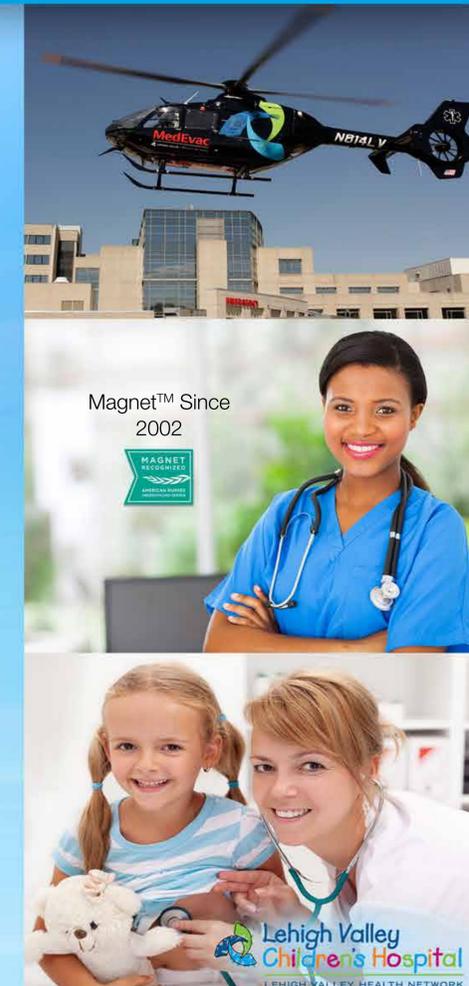
## DISCUSSION

- Proper VTE management in the oncology population can lead to:
  - Decreased morbidity and mortality
  - Reduced costs associated with VTE
  - Positively impact quality of life and reduce chances of future VTE recurrence
  - Decrease the overall incidence of VTE in the oncology population
- Assessment and evaluation of VTE risk in oncology patients is essential
- Plans to implement a validated VTE risk assessment tool into EPIC are underway at LVHN

### References:

1. McCance, K.L., Huether, S.E., Brashers, V.L. & Rote, N.S. (2010). Pathophysiology: The biologic basis for disease in adults and children (6th ed.) Maryland Heights, MO: Mosby Elsevier
2. Grier, M.A. (2014). Prevention of venous thromboembolism in adult patients with cancer in the acute care setting. *Clinical Journal of Oncology Nursing*, 18(3), 290-295. <http://dx.doi.org/10.1188/14.CJON.18-03AP>

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