

2015 CDC HA-VTE PREVENTION HONORABLE MENTION



ORGANIZATION:

Rotunda Hospital | Dublin, Ireland

PATIENT POPULATION:

- 10,814 mothers delivered babies in 2014

BACKGROUND

Venous thromboembolism (VTE), comprising deep vein thrombosis (DVT) and pulmonary embolism (PE), remains the leading cause of direct maternal death. Strikingly, most women who died from pregnancy associated VTE between 2011-2013 had recognizable risk factors for thromboembolism. Many of these deaths may have been prevented if VTE risk assessment had been performed and appropriate anticoagulation prescribed.

Care providers at Rotunda Hospital report that the currently available risk assessment tools are challenging to implement in a busy postnatal settings. As a result, despite the defined need for VTE risk assessment, there is generally poor compliance with traditional risk assessment methods. Addressing this poor compliance is an urgent priority for the Irish healthcare system, as it poses a risk to the lives of pregnant mothers.

• The Rotunda Hospital's strategy to improve healthcare-associated VTE (HA-VTE) prevention is to implement a user-friendly electronic risk assessment tool to ensure all women delivering within the Rotunda Hospital are appropriately assessed for VTE risk.

OBJECTIVES

• To develop and implement a user-friendly electronic VTE risk assessment tool for use in women after delivery in the Rotunda Hospital, Dublin.

• To increase the number of women who undergo formal VTE risk assessment after delivery and improve the prevention of VTE in postnatal women.

METHODS

The Rotunda Hospital developed Thrombocalc, an electronic tool to prospectively assess VTE risk in women, and provided recommendations on dosing and duration of thromboprophylaxis. The risk assessment tool was developed by a multidisciplinary team including hematology, obstetric, midwifery, pharmacy, and hospital administration input.

A review of risk factors for pregnancy-related VTE formed the basis of the Thrombocalc risk assessment tool. For each risk factor, the assigned score is broadly weighted in line with published odds ratios and incidence rate ratios. Each woman's total risk score is calculated based on her individual risk factors. The total Thrombocalc score is used to stratify women into low-, medium- or high-risk categories, which determine the need for thromboprophylaxis. The output of the risk assessment tool details a total-risk score and prescribing recommendations, including dose of low molecular weight heparin (determined by weight), and recommended duration of treatment. The electronic format and generation of a final "score" facilitate rapid VTE risk assessment, and prospective recommendations streamline and standardize VTE prevention practices. Thrombocalc was piloted among a multidisciplinary development team and a technical validation was performed.

Implementation of the HA-VTE Initiative

Thrombocalc was initially launched in the Rotunda Hospital in September 2014. Implementation of Thrombocalc was carried out through close consultation with all stakeholders: executive management team and hospital clinical directors, obstetrics and gynecology, hematology, anaesthetics, and pharmacy.

The risk assessment tool was made available on desktop computers at the point of delivery (in the delivery suite and theatre). Midwifery and nursing staff were encouraged to complete electronic risk assessments forms immediately before discharge from the delivery suite or theatre. After the risk assessment form was completed, a physician reviewed a printed copy and when appropriate, an anticoagulant was prescribed.

Ongoing Monitoring and Adjustments

To facilitate data collection and audit, the information entered on the electronic VTE assessment form is collected and stored within the hospital network. Data are used to monitor Thrombocalc uptake and guide strategies to optimize use.

RESULTS

From September 2014 through December 2015, Thrombocalc was used to prospectively assess VTE risk in 8,322 women. Within this population, no thromboprophylaxis was required in 54.1% of women. In 43.5% of women, thromboprophylaxis was recommended until discharge, and in 2.3% of women, 6 weeks of thromboprophylaxis was recommended.

In the last quarter of 2015, formal VTE risk assessment with Thrombocalc was carried out in 92% of women delivering in the Rotunda Hospital.

CONCLUSIONS

The Rotunda Hospital HA-VTE prevention initiative has demonstrated that it is possible to achieve excellent compliance with postnatal VTE risk assessment in a busy, obstetric setting. Thrombocalc has provided an easy to use and highly effective mechanism for rapid, accurate assessment of individual postnatal VTE risk. The midwives and nursing staff of the Rotunda Hospital, who have incorporated this risk assessment tool as part of their standard of care, have been instrumental to the successful implementation of this VTE preventative strategy.

The team is currently validating an intranet version of Thrombocalc which was developed in collaboration with MEG Clinical Support Tools, an Irish health technology company. Future plans include the development and implementation of an electronic risk assessment tool for use in antenatal populations. There may be potential to integrate Thrombocalc into a new national electronic health record (Maternal and Newborn Clinical Management System) which is under development in Ireland. The Thrombocalc team is also currently collaborating with other healthcare institutions on strategies to improve VTE risk assessment and prevent pregnancy associated VTE.