The Clot is Ticking – Direct Low Risk Pulmonary Embolism discharge from the Emergency Department

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INTRODUCTION

Management of patients with acute pulmonary embolism (PE) in Australia has traditionally involved admission to hospital. There is increasing data to suggest that low risk PE, defined by a Pulmonary Embolism Severity Index (PESI) score <85, may be safe for discharge directly from the Emergency Department (ED). The availability of direct oral anticoagulants (DOACs) has enabled patients to be treated more readily in the community without requiring low molecular weight heparin and bridging to warfarin.

AIM

To establish a care pathway for patients with newly diagnosed low risk PE to safely discharge from ED directly to home.

METHOD

A low risk PE assessment and discharge pathway (see Figure 1 to the right) was included in the Northern Health ED guidelines for the management of chest pain. Introduction of this pathway included access to after-hours pre-labelled apixaban packs for dispensing by the medical officer if required, and referral pathways for review and follow up by Haematology and Pharmacy.

Post implementation, six months of data was collected and audited for patients who has been discharged on this pathway. Patients were identified by screening a list of all patients who were coded as having a presenting complaint or primary diagnoses of PE that were discharged from the ED or Short Stay Unit (SSU).

RESULTS

Six months of data (01/01/22 to 30/06/22) for patients coded with primary diagnosis of PE who were discharged from ED or Short Stay Unit (SSU) was audited. A total of **16 patients** were identified as being discharged using the low risk PE pathway. The average age of these patients was 55 years and six (37.5%) were female. The average PESI score for these patients was 63 (range 28-145). Notably there was two patients who were not classified as low risk based on their PESI score, although both were discharged at the discretion of the Haematology team after >24 hours in the Short Stay Unit.

There were **no representation with bleeding or clot progression** following the first 30 days post discharge. All 16 patients were appropriately referred to the Haematology outpatient clinic, although three were lost to follow up. Of the three patients lost to follow up, one cancelled and transferred care elsewhere, the remaining two patients failed to attend their clinic appointments and/or were uncontactable on the phone number provided. It is unlikely that an acute admission would have altered this outcome.

No. of Patients	Average PESI score	Readmit for clot	Readmit for bleeding	Clot clinic Review
16	62.8	0	0	13

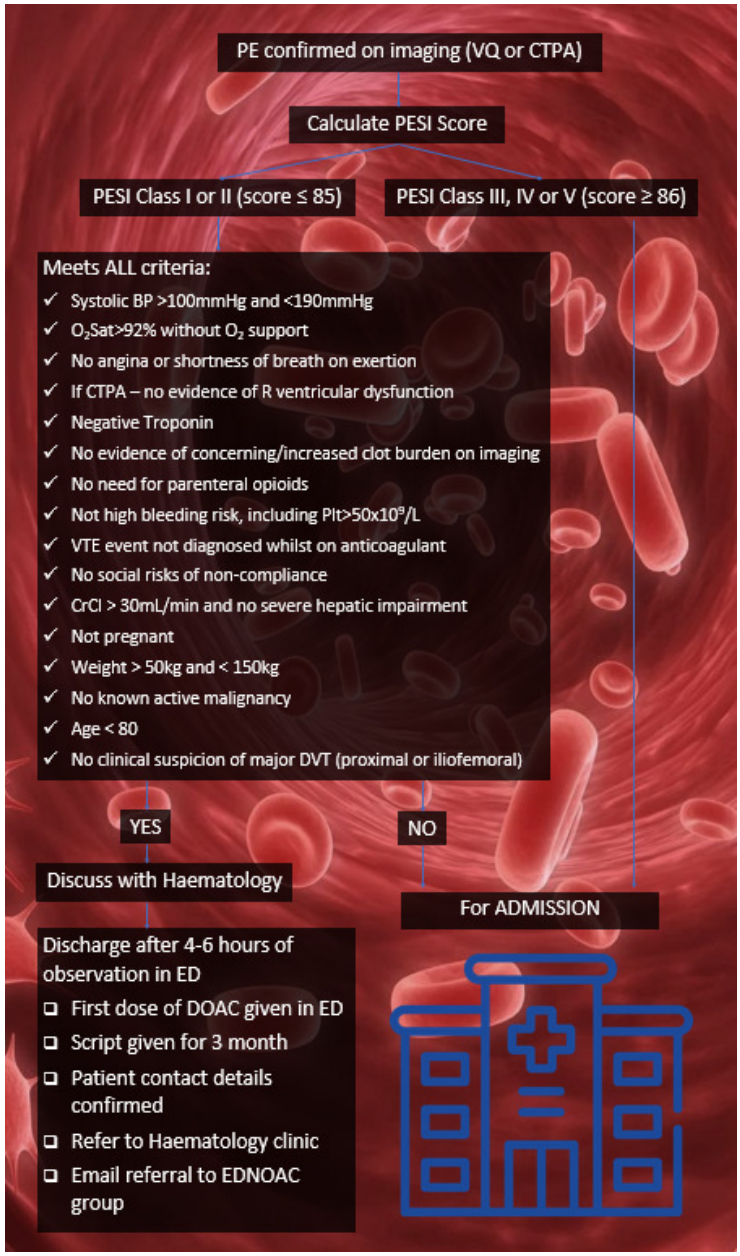
DISCUSSION & LIMITATIONS

Following the audit, the low risk PE pathway was deemed safe and endorsed by the VTE and Anticoagulation Committee for formal adoption into hospital policy, with 3-monthly auditing and reporting back to the committee by the Anticoagulation Stewardship pharmacist. Post formal implementation into hospital policy, initial data collection has indicated that the pathway has seen increasing adoption with no notable negative outcomes to date.

An American study published in 2018 showed a reduction in Length of Stay (LOS) averaging 28.8 hours, and an estimated saving of approximately $2,500 USD (~$3.800 AUD) per admission, using a direct discharge pathway for patients with low risk PE[1]. As the pathway has only recently received formal endorsement and adoption, these outcomes have yet to be measured at Northern Health.

A limiting factor of this audit worth noting is that the data was collected based on primary diagnosis coding for ED presentations. Inaccurate coding of presentations could have led to some patients being unintentionally excluded from the audit.

FIGURE 1: Low Risk PE Assessment and Discharge Pathway



CONCLUSION

Discharging low risk PE patients directly from the ED appears to be safe and beneficial to both the patient and the health service. The patient benefits from reduced inconvenience of time spent in the hospital and the hospital system is able to utilise the bed space more efficiently in other areas.

The availability of the low risk PE management plan and access to timely follow up by Pharmacy and Haematology are important aspects to the ensure that this management pathway can be implemented successfully.

Such pathways are one of many examples of how stewardship services can help improve patient experience and outcomes, whilst also providing sustainable cost benefits to healthcare organization.

REFERENCES

1. Peacock WF et al. Emergency department discharge of pulmonary embolus patients. Acad Emerg Med 2018 May 14; [e-pub]. (https://doi.org/10.1111/acem.13451)