

First Evidence for a Pharmacist-Led Anticoagulant Clinic in a Transitional Care Environment



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Background

Despite the advent of direct-acting oral anticoagulants, warfarin remains a main stay of therapy for many patients, including elderly patients residing in institutions. A narrow therapeutic index requires skilled adjustments to balance anticoagulant protection against abnormal bleeding, and studies have shown improved management by specialized anticoagulation clinics compared to general community practice. Even in a healthier outpatient demographic, warfarin can be challenging to manage due to effects of concomitant medications, disease states, dietary changes, and transitions in care environments.

Patients in transitional care facilities are among the highest risk patients for abnormal coagulation due to their advanced age, comorbidities, ancillary medications and the known clinical challenges of transferring a patient to another provider.

While the overall time in therapeutic range (TTR) in all patients is less than desired nationally (overall average 60-65%), it is likely patients in transitional care facilities may have even less favorable TTR. Furthermore, there is limited data for transitional care patients and their associated TTR. Failure to maintain a therapeutic INR or therapy interruption may increase the risk of thrombosis and death, making appropriate management in at-risk patients paramount.

In a 12 month retrospective chart review of long-term care patients, pharmacists-led warfarin dosing achieved a TTR of 58.7% (54.7% in range) compared to non-pharmacist, clinical staff TTR of 47.1%.

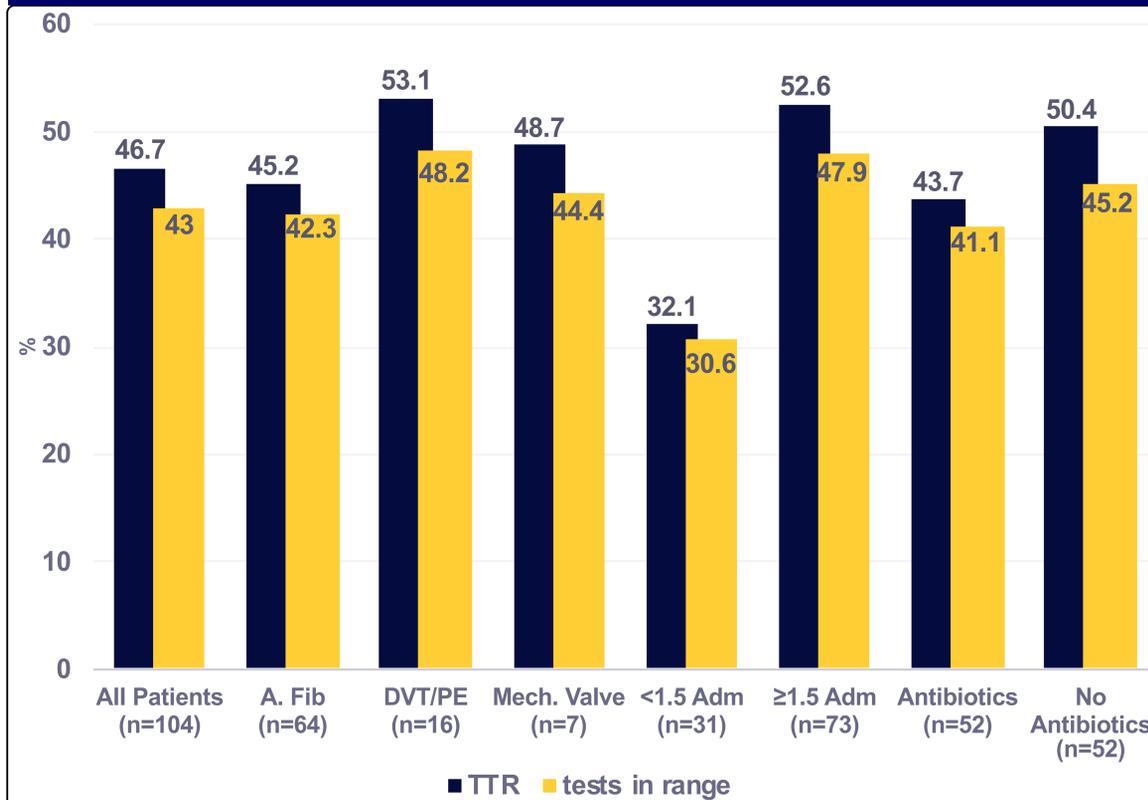
Objective

To evaluate TTR for a pharmacist-led anticoagulant clinic in a short-term transitional care environment (TCE).

Methods

A retrospective review of all warfarin patient admissions from a large long-term care pharmacy's anticoagulant clinic was conducted for residents between July 2016 and December 2017. All INR results (admission to discharge), test dates, INR goal range, age, indication, interacting medications, number of medical errors, adverse bleeding events, and vitamin K doses administered were collected. TTR was calculated by the Rosendaal method. Additional variables included percentage of INR measurements within range, INR values below 1.5 upon admission, number of subtherapeutic and supratherapeutic INR values, and number of antibiotic courses during stay. The pharmacist maintains a comprehensive record of the patient's therapy goals, drug interactions, INR results and warfarin dosing history.

Results



TTR by indication:

- Atrial fibrillation (n=64), TTR 45.2% (42.3% in range)
- Venous thromboembolism (n=16), TTR 53.1% (48.2% in range)
- Mechanical valve (n=7), TTR 48.7% (44.4% in range)
- All indications (n=100), TTR 46.7% (43% in range)

Patients with INR <1.5 and ≥1.5 at time of admission had a TTR of 32.1% and 52.6%, respectively. Overall INR range was 0.89-6.26 (mean=2.2) with 5-6 drug interactions per patient. Out of range INR values included 382 subtherapeutic and 106 supratherapeutic values. Average resident age was 78.7 years with a mean stay of 19.5 days. Vitamin K administration was not required.

Implications

Managing anticoagulant therapy in advanced age patients in partnership with a short-term transitional care facility (TCF) is challenging for healthcare providers. Investigators demonstrated a pharmacist under a collaborative practice agreement can guide anticoagulant therapy in the most challenging patients. Challenging variables included advanced age residents, post hospital discharge communication barriers, short duration of stay, a high number of warfarin drug to drug interactions per resident, documented administration errors at the facility and a high percentage of patients with a baseline INR <1.5 on admission. Expectedly, in a population managed for less than a month on average, TCF TTR was found to be slightly lower than patient populations managed longer term (LTC and outpatient).

The investigators observed increased TTR as the average duration of stay increased, and the lowest TTR was in patients with a baseline INR < 1.5 at admission. Of the 856 INR results, it was not surprising that nearly 45% were subtherapeutic and 12% supratherapeutic despite an average of more than five warfarin drug interactions per resident.

In conclusion, the authors believe that given the challenges of managing anticoagulation in this population, collaborative practice opportunities improve patient care while making patient care more efficient and effective.

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The Transitional Care Environment

