Clinical pharmacist-managed anticoagulation service in atrial fibrillation patients: an Egyptian experience

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OBJECTIVE

AF increases risk of a stroke by 5 times and is the most powerful independent risk factor for stroke. Warfarin is the corner stone for management and has been shown to reduce AF-related deaths(1). Managing warfarin administration is challenging and requires intensive monitoring (2). AF patients require intensive education for AF management. Anticoagulation management service is a gold standard for patient education and warfarin management (3).

This study aimed to evaluate the impact of clinical pharmacist-provided anticoagulation management on; TTR, incidence and severity of bleeding and thromboembolic events, incidence of warfarin drug and food interactions and subjective anticoagulation knowledge assessment.

PATIENTS & METHODS

A prospective randomized controlled study. All newly diagnosed non-valvular AF patients receiving warfarin were assessed for eligibility. Eligible patients were randomly assigned to either group A (intervention group, n=30); AF patients received clinical pharmacist-managed anticoagulation service, or group B (Control group, n=30); patients received routine medical care. Informed consents were obtained from all patients. At baseline, the following was evaluated in both groups; demographics, anticoagulation knowledge assessment questionnaire (AKA) and INR and patients were given a side effect self-reporting card. Test group was subjected to a systematic anticoagulation management and education. Follow up was done for 6 months for both groups. Final evaluation included; percentage time in therapeutic range (TTR), AKA score, side effect, warfarin drug and food interaction reporting.

RESULTS

Groups were comparable at baseline. After 6 months, the intervention group versus control group, showed a significantly higher TTR% (68 ± 8 versus 38 ± 11, p <0.001) (Table 1, figure 1), a lower incidence of bleeding events (p <0.001) (Figure 2), a lower incidence of warfarin-drug interactions (p <0.001) and a higher AKA score (21 ± 2.4 versus 10.4 ± 3, p <0.001), (Figure 3)

CONCLUSION

Pharmacist managed anticoagulation management service improved patients' INR control, frequency of acute complications and warfarin drug interactions and patients' level of anticoagulation education.
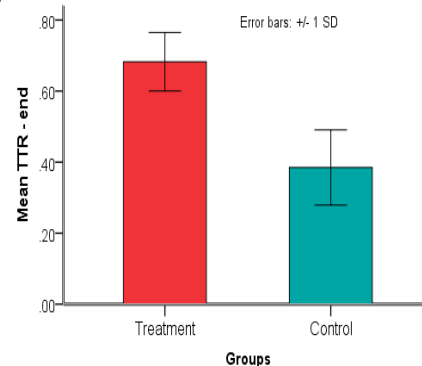

Figure 1. Percentage TTR in both groups
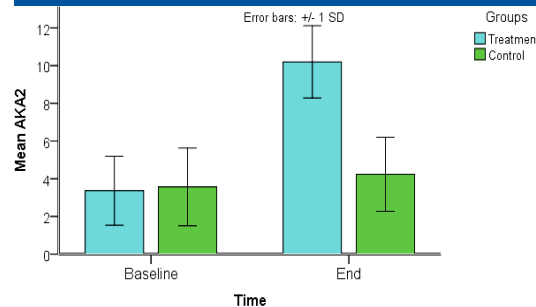Statistical test; Student T- test

Figure 3. Anticoagulation Knowledge Assessment (AKA) 2 score in both groups before and after 6 months study.

Statistical test; Two way ANOVA

REFERENCES:
1.**Marini C, De Santis F, Sacco S et al**. Contribution of atrial fibrillation to incidence and outcome of ischemic stroke: results from a population-based study. *Stroke 2005*;36:1115–1119
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3. **Ansell J, Hollowell J, Pengo V et al**. Descriptive analysis of the process and quality of oral anticoagulation management in real-life practice in patients with chronic non-valvular atrial fibrillation: the international study of anticoagulation management (ISAM). *J Thromb Thrombolysis* 2007;23:83–91

Table 1. Number of INR readings and % TTR in both groups

INR Readings	Control group (n=30)	Study group (n=30)	p
Total no ^ (mean ± SD), (range)	11.8 ± 2 (7-15)	10.6 ± 0.9 (9-12)	0.004**
No of in range readings ^ (mean ± SD)	4.5 ± 1.4	7.2 ± 0.9	<0.001**
No of out of range readings ^ (mean ± SD)	7.3±1.8	3.4±1.0	<0.001**
No of below range readings^ (mean ± SD)	4.5±1.7	2.8±1.0	<0.001**
No of above range readings § (median)(Range)	3 (0-5)	0 (0-2)	<0.001**

n; number of patients,
Statistical test; ^Student T- test, § Mann-Whitney, *p ≤ 0.05 is considered significant, **p ≤ 0.01 is considered highly significant

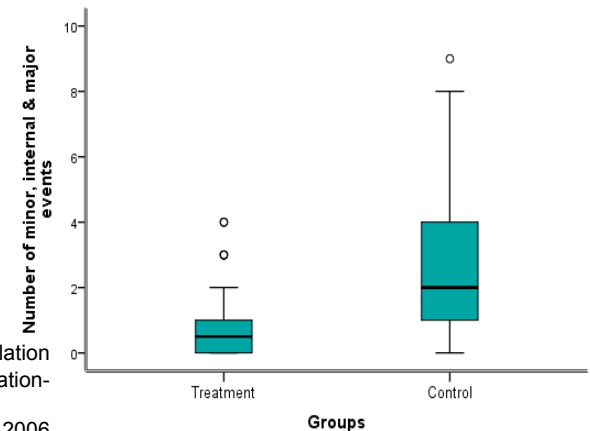**Figure 2. Overall bleeding incidence in Study group versus control group.**

Statistical test; Mann-Whitney