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ASSESSMENT OF ORAL ANTICOAGULATION KNOWLEDGE AMONG RURAL INDIAN POPULATION

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ABSTRACT

Aim: 1. To assess Oral Anticoagulation Knowledge (OAK) among valve replacement patients. **2**. To correlate OAK score with INR values of patient. **Methodology:** 100 patients who have undergone valve replacement surgery and on oral anticoagulation therapy for a minimum period of 6 months were included. The OAK test created by Zeolla et. al was used. **Study design:** Questionnaire based prospective cross sectional study. After getting informed consent of the subject, OAK assessment questionnaire was given. Each question was explained and response noted by trained staff. Scoring was categorized as low(<50%), medium(50-75%) and high(>75%). **Results:** Statistical analysis was done using SPSS software. 79.17% of patients had low and 20.13% had medium OAK score. No patient had high OAK score. 90% of those with medium OAK had control INR, while only 71.05% with low OAK had control INR. **Conclusion:** The oral anticoagulation knowledge among patients was not satisfactory. Patients with medium OAK score had better INR control than those with low OAK score.

KEYWORDS: Oral anticoagulation knowledge, Warfarin, therapeutic INR range.

INTRODUCTION

Anticoagulants are drugs used to reduce the coagulability of blood & prevent thrombus formation, within the blood vessels. The indications for anticoagulants are increasing and they are essential for the prevention and treatment of thrombo-embolic events. They prevent stroke in patients with atrial fibrillation and improve outcomes in patients after myocardial infarction. Warfarin sodium has been widely used as an anticoagulant since 1954.[1]

Warfarin has a narrow therapeutic index. It's use in clinical practice becomes a challenge due to genetic variation in dose response, interaction with food and other drugs, co-existent diseases and knowledge of anti-coagulation therapy.[2] To maintain the therapeutic level of anti-coagulation the patient needs to understand about warfarin. This can be achieved only by a good patient communication.

The patient has to be educated fully regarding warfarin therapy as beyond the therapeutic range, either failure to prevent thrombus formation or serious bleeding may occur.[3]

Literature review suggests that, it is essential to improve patient knowledge about warfarin therapy, to improve the therapeutic outcomes.[4-8]

OBJECTIVES

Primary

1. To assess the knowledge about oral anticoagulation therapy among rural Indian population using the oral anti-coagulation knowledge (OAK) test created by Zeolla et al.

Secondary

1. To analyze the socio-demographic data of the patients taking warfarin therapy.
2. To correlate the patient's knowledge on anticoagulation therapy with the INR values.

MATERIALS AND METHODS

This study was conducted in the Cardiology Department, Chettinad Hospital and Research Institute, Kelambakkam, Tamilnadu after getting approval from the Institutional Human Ethics Committee.

Sample size: 100 patients.

Study design: Questionnaire based prospective cross sectional study.

Subject selection

Inclusion criteria

1. Patients who have undergone valve replacement surgery and on oral anticoagulation therapy for a minimum period of 6 months.
2. Patients over 18 years of age.
3. Both male and female patients.

Exclusion criteria

1. Severely ill patients.
2. Patients with co-morbid systemic diseases and on multiple medications.
3. Patients with cognitive impairment and could not complete the questionnaire.

Duration of study: 6 months.

Study details

After getting informed consent of the subject, the patient was given the OAK assessment questionnaire, each question was explained and response noted by trained staff.

The scoring for OAK test was categorized as low (< 50%), moderate (50-75%) & high(>75%).

The INR values of the patient in the past 6 months (minimum 3 values) were collected from lab data. The patient's knowledge on oral anticoagulation therapy was correlated with the INR values in the past 6 months.

Ethical issues

Informed written consent was obtained from all patients participating in the study. Confidentiality of the subjects was maintained throughout.

Statistical analysis

Statistical analysis was done using SPSS software.

RESULTS

Of the 100 patients enrolled in the study, 58 were female and 42 were male patients. Mean age of the patients participated in the study was 42 yrs. Other sociodemographic data given in Table 1.

Table 1.Sociodemographic data of study participants.		%
Sex	Male	42.00
	Female	58.00
Educational Status	No education	24.00
	Primary	48.00
	Higher Secondary	24.00
	UG	4.00

The correlation between OAK score and INR values are given in Table 2.

79.17% of the subjects had an OAK score <50% and this is considered as low oral anticoagulation knowledge. 20.83% subjects scored 50-75% and had moderate oral anticoagulation knowledge. Unfortunately no one scored more than 75%.

Table 2. Correlation between OAK score & INR values.				
OAK score	**INR values**			**Total**
	Sub Therapeutic INR	**Therapeutic INR**	**Supra Therapeutic INR**	
< 50%	14.58	56.25	8.33	79.17
50 – 75%	2.08	18.75	0	20.83
> 75%	0	0	0	0
Total	16.67	75.00	8.33	100.00
Pearson's Chi Square Test: Value : 1.768; p value : 0.413				

The mean of total score obtained by 100 patients for each question is given in figure 1.

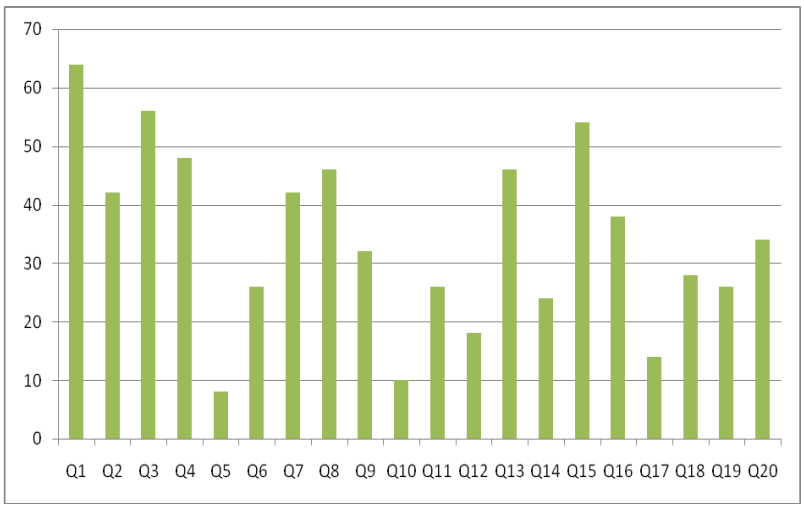

Fig. 1 Score for each question.

DISCUSSION

From the results, it is clear that the oral anticoagulation knowledge among the patients is not satisfactory.

There is definitely a positive correlation between OAK score % and the INR values. 90% of patients with moderate OAK score had INR values within therapeutic range (2-4), whereas only 71.05% patients with low OAK score had therapeutic INR values.

10% of moderate OAK score patients had suboptimal INR values, while 18.42% of low OAK score had suboptimal INR values.

10.53% of low OAK score patients had high INR values, but no patients with moderate OAK score had high INR values.

Unfortunately no patient enrolled in this study had high OAK scoring.

75% of the subjects in the study had control INR values. 16.67% of the total pts had suboptimal INR values. 8.33% of the total patients had high INR values.

There are 3 questions in the questionnaire for which more than 50% correct response had been obtained. They are regarding missing one dose of warfarin, when a patient on warfarin should contact a physician and when to monitor signs of bleeding.

It is also clear that patients have poor knowledge on drug and dietary interactions with warfarin and correlation between skipping one dose of warfarin and PT/INR range. This area of lacunae in OAK has to be strengthened by better patient communication by both medical and paramedical professionals.

The results show similarity with other international studies conducted by Laila Mahmoud Ali Matalqah et al., Jank. S et al., Roche-Nagle. G et al., Barcellona. D et al. and Taylor. F.C et al. in Malaysia, Germany, Ireland, Italy and London population respectively.

Patient knowledge about anticoagulation therapy can also be reinforced by advice given by non-medical counsellors and with patient information sheets like posters or leaflets. Thus, a combined approach of good patient communication and imparting patient knowledge with educational guides can be considered in the future to attain maximum therapeutic and clinical outcomes.

Declarations

Conflict of interest – None.

Ethical approval: The study was approved by the Institutional Human Ethics Committee at Chettinad Hospital and Research Institute.

CONCLUSION

The knowledge of patients regarding oral anticoagulation therapy is not satisfactory. There is a positive correlation between OAK scoring and INR range. Patients with moderate OAK score had better INR control than those with low OAK score. Better patient communication by both medical and paramedical professionals, along with patient information leaflets will help improving the OAK and hence the goal INR range.

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