

Knowledge, attitude and practice of thromboprophylaxis among doctors in Edo State, Nigeria

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Abstract

Introduction: *Despite the overwhelming evidence in favour of thromboprophylaxis and availability of effective methods and clinical guidelines, the awareness and practice still vary significantly globally. This study sought to highlight the current level of knowledge, attitude and practice of thromboprophylaxis among doctors in Edo state, as a microcosm of the national health system.*

Method: *This is a cross-sectional descriptive study carried out in major health centers in Edo state, Nigeria to survey the knowledge, attitude and practice of thromboprophylaxis among doctors in Edo state. Relevant data were collected using a pretested self-administered questionnaire and analyzed using IBM SPSS 20.*

Result: *A total of 90 practitioners returned the completed questionnaire. All the respondents demonstrated good basic knowledge of the concept of thromboprophylaxis. However, only 2% knew that placement of inferior vena cava (IVC) filter and chest exercise are thromboprophylactic methods. Over 90% of the respondents thought that venous thromboembolism was a significant problem among hospitalized patients while 45% of them also thought that the practice of thromboprophylaxis was sub-optimal in their various hospitals. Majority of the practitioners (90%) preferred pharmacologic prophylaxis with LMWH (70%) being their most favorite for thromboprophylaxis. Less than 50% of the respondents had managed >5 cases of thrombosis and less than 20% consistently administer thromboprophylaxis to at-risk patients.*

Conclusion: *While this survey showed a considerably high level of knowledge of thromboprophylaxis among practitioners, there was still significant deficiency with regards to attitude and practice of the same among doctors in this region.*

Introduction

Despite scientifically documented rationale for thromboprophylaxis, studies^{1,2} have demonstrated that venous thromboembolism (VTE) prophylaxis is suboptimal globally. VTE which encompasses deep vein thrombosis

(DVT) and pulmonary embolism (PE) remains an important but preventable cause of morbidity and mortality for hospitalized patients. In the US, the annual incidence of symptomatic VTE is estimated to exceed 600,000 and there are nearly 300,000 VTE-

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related deaths annually³. Medical risk factors include: trauma (major or lower extremity), prolonged immobility, paresis, malignancy, cancer therapy, previous VTE, increasing age, pregnancy and the postpartum period, acute infectious disease, heart failure, respiratory failure, obesity and smoking^{4, 5}. Without measures to prevent the occurrence of VTE (VTE prophylaxis), DVT occurs in 10–40% of medical or general Surgery patients and in 40–60% of patients after major orthopedic Surgery⁶. Publications on the incidence of VTE in our locality are scarce and there are no available reports on current practice of thromboprophylaxis. The justification for thromboprophylaxis stems from scientific evidence and sound principles⁶ such as:

- (1) Hospitalized patients generally have one or more risk factor for VTE.
- (2) DVT and PE are usually clinically silent and screening is neither effective nor cheap
- (3). VTE causes significant morbidity and often fatal consequences and
- (4) Thromboprophylaxis is effective as well as cost effective and with very reasonable side effects.

Prevention of VTE could be by the use of anticoagulant drugs: heparin, fondaparinux, warfarin, rivaroxaban and dabigatran. Also non-pharmacological means have been shown to significantly reduce risk of VTE⁷. Mechanical methods of thromboprophylaxis include the use of elastic stockings, intermittent use of pneumatic compression devices/foot pumps and mobilization to improve the venous blood flow in conditions predisposing to venous stasis⁸. Efforts are being made in different parts of the world to enhance thromboprophylaxis in medical practice. However there are no available publications on the current state of thromboprophylaxis in the Nigerian healthcare system.

This study seeks to highlight the current level of knowledge, attitude and practice of thromboprophylaxis among doctors in Edo state, as a microcosm of the national health

system. The goal is to facilitate the establishment of local guidelines and to optimize adherence to use of thromboprophylaxis in our health institutions.

Materials and methods

This is a cross-sectional, descriptive survey of the knowledge, attitude and practice of thromboprophylaxis among doctors in Edo state. Pre-tested self-administered questionnaires were used to obtain the relevant data relating to knowledge, attitude and practice of thromboprophylaxis. The data obtained were analyzed using IBM SPSS 20.

Results

Of the 90 respondents, 69% were resident doctors, 15.6% consultants. Others were medical officers and house officers. Hematologists made up 24.4% while general surgeons and internal medicine physicians each made up 17.8% and pediatricians contributed 10%. Others were gynecologists, neurosurgeons and urologists.

All the respondents indicated that thromboprophylaxis is about prevention of

Table 1: Duration of practice

	N	(%)
< 5 years	47	52.2
5 - 10 years>	36	40.0
10 years	7	7.8
Total	90	100.0

thrombosis while 50% of them also responded that thromboprophylaxis is a form of treatment. 1.1% did not know the meaning of thromboprophylaxis. Duration of practice in years of the respondents is shown in table 1.

Eighty nine percent and 77% reported that method of thromboprophylaxis is pharmacological and non pharmacological

respectively, while 23% think that both thromboprophylactic techniques while less than 2% indicated that the use of IVC filter and methods can be used.

Table 2: Knowledge of medications and Mechanical methods used for thromboprophylaxis medications used for thromboprophylaxis

Medications	%		Total(%)
	Yes	No	
Unfractionated heparin	68.9	31.1	100
Low molecular weight heparin	92.2	7.8	100
Rivaroxaban	32.2	67.8	100
Fundaparinux	34.4	65.6	100
Dabigatran	30.0	70.0	100
Warfarin	76.7	23.3	100
Aspirin	92.2	7.8	100
Mechanical methods used for thromboprophylaxis			
Early ambulation	92.2	7.8	100
Physiotherapy	77.8	22.2	100
Graduated compression stockings	82.2	16.9	100
Intermittent pneumatic compression device	80	20	100
Chest Exercise	1.1	98.9	100
IVC filters	1.1	98.9	100
Lifestyle Modification	1.1	98.9	100

Over 92% of respondents had knowledge of monitoring of anticoagulation therapy.

More than 90% of the respondents accepted that venous thromboembolism is a significant problem among hospitalized patients while about 45% of the respondents felt that the practise of thromboprophylaxis in their hospitals was sub-optimal.

Evaluation of knowledge of Pharmacotherapeutic agents and mechanical methods used for thromboprophylaxis is shown in table 2. Over 90% of the respondents indicated that low molecular weight heparin and aspirin are good thromboprophylactic agents while 32% and 34% respectively indicated that Rivaroxaban and fundaparinux are used for thromboprophylaxis. Majority of the respondents agreed that early ambulation, physiotherapy, intermittent pneumatic compression device and graduated compression stockings are good mechanical

chest exercise are good practice of thromboprophylaxis.

Table 3: Frequency of administration of thromboprophylaxis to patients at risk

	N	%
Rarely	19	23.2
Frequently	50	61.0
Always	13	15.9
Total	82	100.0

Less than 50% of the respondents have managed >5 cases of venous thromboembolism throughout their entire years of practice. Evaluation of frequency of administration of thromboprophylaxis to patients at risk showed that less than 20% of the respondents offer thromboprophylaxis to at-risk-patients as shown in table 3, and this practice did not differ significantly across years of practice or across ranks of practitioners.

About 50% of the respondent indicated that they do some form of bleeding score

Table 4: Preference of thromboprophylaxis

	N	%
Low molecular weight		
heparin	64	71.1
Unfractionated heparin	12	13.3
Warfarin	11	12.2
Aspirin	2	2.2
Rivaroxaban	1	1.1

assessment prior to administration of thromboprophylaxis. In terms of preference, over 80% of the practitioners preferred pharmacotherapeutic thromboprophylaxis to

Table 5: Reason for preference of different pharmacological thromboprophylactic agents

	N	%
Safety profile	45	50
Cost effectiveness	30	33.3
Availability	46	51.1
Route of administration	35	38.9

mechanical methods. About 70% of the respondents indicated Low molecular weight heparin as their preferred medication for thromboprophylaxis while less than 2% favors rivaroxaban and fundaparimus (table 4)

Majority (51%) of the respondents indicated that the availability of the pharmacologic agent was the key factor that influenced their choice of thromboprophylactic agent while 50% consider safety profile as key. Other factors that reported were cost and route of administration.

Discussion

Venous thromboembolism is a significant cause of illness and death worldwide. Large bodies of evidence support the increasing risk for thromboembolism globally, and that thromboprophylaxis can significantly reduce the risk.

Bikdeli *et. al* observed that despite availability of different effective pharmacological and mechanical thromboprophylactic methods and clinical guidelines, adherence rate still remained very low among practitioners⁹. In this survey over 90% of the respondents demonstrated a good understanding of the concept of thromboprophylaxis. Many of them also agreed that thromboembolism is a significant problem among hospitalized patients. However, only 20% consistently administer thromboprophylaxis to at-risk patients. This study failed to evaluate availability and awareness of national and institution based clinical guidelines and such omission creates a significant problem of interpretation of the observed variance between the knowledge of the need for thromboprophylaxis and its practice among the participating practitioners. The study undertaken by Zahir¹⁰ to evaluate awareness and practice of thromboprophylaxis among surgeons in Pakistan reported that although majority of surgeons used some form of thromboprophylaxis, few of them were versed about the different guidelines and only few followed them.

In our survey majority of the practitioners favoured the use of pharmacological agents with the most favorite being low molecular weight heparin. Rivaroxaban and fundaparimus were among the least used. This is not in keeping with the growing use of the more effective new generation agents in western countries¹¹. This may be partially explained by lack of awareness about these agents in low resource countries like Nigeria. Other explanations may be related to cost and affordability. These new generation agents are obviously more expensive. This survey has also shown that about 61% of the respondents do some form of bleeding risk analysis, albeit not following any standard guideline.

Conclusion

While this survey shows a considerably high level of knowledge of thromboprophylaxis

among practitioner, there is still considerable deficiency with regards to attitude and practice of the same among doctors in this region.

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