

Secondary prophylaxis decision-making in venous thromboembolism: interviews on clinical practice in thirteen countries

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Abstract

Objectives: Secondary prevention of venous thromboembolism (VTE) remains a topical and contentious point of debate for thrombosis experts around the globe. This discussion centers around two aspects: optimum treatment duration and which type and dosage of thromboprophylaxis to prescribe. Collectives of thrombosis experts have tried to steer the debate by issuing periodical best-practice guidelines. However, the lack of adherence to said guidelines is such that there is a growing body of research devoted to this very problem. Most of the studies on the subject retrospectively observe a single setting, which leaves important questions as to the generalizability of their findings. As each setting appears to face its own unique challenges, the overarching question of why there is so much variance between physicians when it comes to the secondary prevention of VTE is never fully addressed.

Methods: For this study, we asked thirteen senior-level physicians representing equally as many countries about the current state of clinical practice regarding the secondary prevention of VTE.

Results: The discussion identifies several barriers to adequate VTE prevention, and hints at area-specific idiosyncrasies that may explain why physicians from different locales treat VTE patients differently.

Conclusion: Universal treatment guidelines may not fully translate to clinical practice in many areas, and that promoting local guidelines to supplement the universal guidelines may be beneficial.

KEYWORDS

venous thromboembolism, secondary prevention, thrombosis, interview, guideline adherence

Essentials

- Thrombosis experts still struggle to reach consensus regarding the optimal type, dosage and duration of treatment.
- We asked 13 leaders in the field to comment on the prevention of venous thromboembolism (VTE) in their respective countries.
- Universally relevant risk factors as well as area-specific barriers to adequate treatment are identified.
- Local guidelines may be beneficial to guide decision-making in areas where universal guidelines fall short.

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1 | INTRODUCTION

Secondary prevention of venous thromboembolism (VTE), especially the optimum duration of treatment and which type and dosage of thromboprophylaxis is preferable, remains a topical and contentious point of debate for thrombosis experts around the globe.^{1–4} Prominent collectives of thrombosis experts have tried to steer the debate in a more unified direction by issuing periodical best-practice treatment guidelines. The most widely used of these, published by the American College of Chest Physicians (CHEST, formerly: ACCP), is referenced by physicians all over the world. Still, the lack of adherence to these guidelines is such that it has warranted a growing body of research devoted to this very problem.^{5–9} Most of the studies on the subject retrospectively observe a single setting, which, while interesting, leaves important questions as to the generalizability of their findings. As each setting appears to face its own unique challenges, the overarching question of why there is so much variance between physicians when it comes to the secondary prevention of VTE is never fully addressed.

What could we do, then, to formulate a more universal answer to this question? In our view, a decent starting point would be to ask those who should know best: senior physicians involved in the treatment of VTE, whose stature in their local communities enables them to present a broader perspective. For this study, we interviewed 13 such physicians from a diverse range of countries, asking about the clinical practice of secondary prevention of VTE in their country. This paper details the accounts they gave, in which all aspects of VTE treatment were discussed, and area-specific barriers to treatment were identified.

2 | METHODS

From December 2015 to February 2016, we conducted 13 telephone-based, semi-structured interviews with an equal number of senior-level physicians in the field of thrombosis, all of who were at the time affiliated with medical centers participating in the Einstein Choice study.¹⁰ We selected interviewee candidates on the basis of their considerable experience, stature, and organizational involvement in their respective local professional communities. The reasoning behind this selection strategy was that a prominent professional standing should confer a level of oversight and insight not afforded to physicians of lesser experience and lower professional status. Thirteen of the approached candidates were able and willing to participate in this study. Among the selected participants were specialists involved in the management of anticoagulation clinics, specialists who had contributed to national treatment guidelines, and specialists who otherwise supervised or directed care in multiple medical centers in their country of employment. To protect the anonymity of our interviewees, no personally identifying details apart from gender pronouns appear in this paper or elsewhere.

The following themes were addressed in the interviews: which risk factors are considered in determining treatment and how these are weighted; type and duration of secondary prevention; barriers to treatment and reasons for discontinuing VTE treatment; the use

of protocols, guidelines and risk scores, and country-specific circumstances regarding the provision of antithrombotic care (Figure 1). All of these themes were determined in advance of the interviews, based on the existing literature on the subject, including best-practice guidelines.^{11,12} The decision to include the theme on country-specific circumstances was informed by the regional and cultural diversity of countries from which our participants hailed.

Physicians from the following countries participated in this study: the United States of America, Brazil, Canada, Hungary, Israel, the Netherlands, the Philippines, Poland, Russia, South Africa, Sweden, Thailand, and Vietnam

All interviews were recorded and transcribed. In vivo coding¹³, ie, labeling transcript sections with phrases derived from the interviews, was used to organize research findings (Figure 1). Some of the interview excerpts that appear in this paper were minimally edited for clarity.

Medians and interquartile ranges (IQR) were computed for the physicians' self-reported years of experience, and self-estimated unique patients treated per annum.

3 | RESULTS

The average duration of a call was 28.2 minutes. The interviewed physicians had a median of 30 years (IQR: 18) of VTE treatment experience at the time of being interviewed, and treated a median of 125 (IQR: 175) unique patients per annum at the time of being interviewed.

3.1 | Universal risk factors

A diverse array of VTE recurrence risk factors emerged from the interviews (Table 1). Although each interviewed physician stratified risk differently, 2 disease characteristics were universally identified as exerting the most influence on the secondary prophylaxis of VTE in the large majority of cases.

3.1.1 | Idiopathic or non-idiopathic

As a category, idiopathic cases of VTE, ie, cases of unknown etiology, were treated for longer periods of time than cases provoked by known and reversible risk factors (henceforth: provoked cases). Most interviewees indicated that they tend to treat provoked cases for 3 months only; in particularly severe cases, exceptions to this rule were made and treatment carried on longer. If the event under examination constituted a recurrence, all interviewees favored indefinite anticoagulation therapy. Table 2 summarizes the responses of the interviewees when asked to provide a rough estimate of average treatment duration in their country for these three types of VTE.

3.1.2 | Proximal or distal

The distinction between proximal and distal VTE emerged as the second most important criterion in determining the duration of secondary

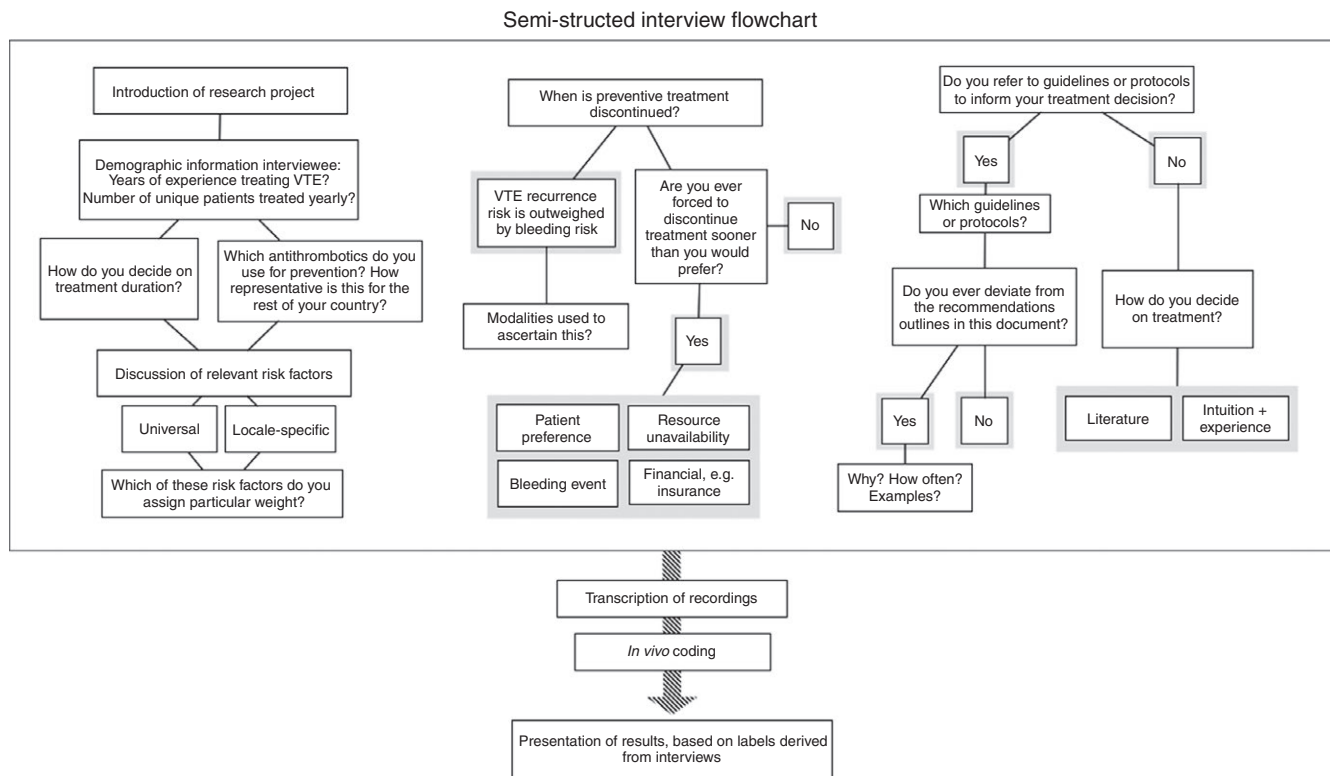


FIGURE 1 Semi-structured interview flowchart

prophylaxis. Like provoked VTEs, distal DVTs were largely treated for 3 months. Proximal VTEs were treated for at least 6 months.

3.2 | Area-specific aspects and barriers to VTE treatment

Venous thromboembolism treatment was not exclusively dictated by the relatively universal characteristics described thus far. Various area-specific features also influence and at times complicate treatment to varying degrees of intensity. The following is a summary of area-specific factors that affect VTE treatment in clinical practice, as reported by our interviewees.

3.2.1 | Cost of medication and health insurance

The interviewees indicated that the cost of drugs and health insurance policies significantly affect their decision-making in providing secondary prophylaxis of VTE. The scenario that emerged most frequently was that it impeded free choice in selecting the type of oral anticoagulant administered for long-term use. The high cost of direct oral anticoagulants (DOACs) and the lack of health insurance coverage of these drugs were cited as particular concerns in this respect. The following interview excerpts illustrate how the cost of medication and health insurance coverage differentially influence decision-making surrounding thromboprophylactic care in VTE in settings of variable affluence around the world.

The American interviewee describes a situation of great diversity in insurance plans in the United States, and notes that for many patients DOACs are prohibitively costly with the current options:

In the United States the direct oral anticoagulants can be quite expensive depending on the individual's insurance. There is no one anymore who's uninsured. But you can pay 550 dollars a month and have a terrible policy where you pay 100% of your own expenses until you get to 7000 dollars a year, or 10 000 dollars a year. [...] Warfarin is considerably less expensive; you can get warfarin for 10 dollars for 3 months. And your international normalized ratio (INR) checking is nearly free. So it depends upon what the patient can afford.

In neighboring Canada, the government provides universal coverage, but only for a limited period of time. This means that, even when a patient is started on a DOAC, he or she may have to switch to the more affordable VKAs once the coverage period for DOACs has reached its limit:

What happens in Canada is [that] the [DOACs] [...] are covered only for 6 months for VTE. [...] Some people have private insurance, [which] cover them, and they can continue, and some people don't have private insurance. So, [...] some people pay it out of pocket. It's around 130 [Canadian] dollars a month. What happens is, some people cannot pay it, and then you tell them, "probably you need to continue with warfarin," and now, that's where the discussion starts.

According to the Israeli interviewee, DOACs are licensed for use in VTE treatment in Israel, but health insurance providers do not yet cover them for VTE patients:

TABLE 1 Bleeding and thrombosis risk factors as mentioned by the interviewed physicians

Country	Bleeding risk factor	Thrombotic risk factor
USA	Level of activity (eg, sports), old age (ie, frailty), prior bleed (esp. intracranial or retroperitoneal), underlying disease, liver disease or poor liver function, elevated INR	Prior VTE, immobility (via obesity or other disabilities, old age), Thrombophilia: homozygous factor V Leiden, prothrombin gene mutation, antiphospholipid antibody
Brazil	Renal insufficiency, bleeding event, difficulty to remain compliant, history of bleeding, uncontrolled hypertension, hemorrhagic cerebral stroke, other drugs or coronary heart stents leading to antiaggregation, HAS-BLED risk factors	Thrombophilia, obesity
Canada	Thrombocytopenia, old age induced frailty, unstable INRs, concurrent antiplatelet therapy, liver disease, alcoholism, conflicting medication, low BMI	Male gender, major thrombophilia (antithrombin deficiency, lupus anticoagulant, protein C, protein S, homozygous factor V Leiden, combined defects), signs of post-thrombotic syndrome (PTS)
Hungary	Liver disorder, stomach ulcer disorder, cerebrovascular disorder, untreated hypertension, alcoholism, concurrent antiplatelet therapy	Thrombophilia: homozygous or heterozygous factor V Leiden, thrombin deficiency, protein C, protein S, lupus anticoagulant, antiphospholipid antibodies
Israel	Renal failure, thrombocytopenia, comorbidity, ulcers, lesions	Family history of VTE, thrombophilia, comorbidity, level of physical activity, BMI, dehydration
Netherlands	Elderly age, kidney function, liver function, TTR of INR, prior bleeds, hypertension	Inflammatory gastrointestinal disease, comorbidity profile (esp. malignant disease)
Philippines	Age (as proxy for frailty), concurrent antiplatelet therapy, prior bleeds, gastrointestinal sores, liver function, kidney function, active bleeding, indicators of non-compliance (eg, dementia)	Symptoms of PTS, advanced age, respiratory disease, thrombophilia, history of VTE, cardiopulmonary conditions (eg, stroke), level of activity (eg, sedentary)
Poland	Serious renal insufficiency, bleeding events or evidence of bleeding (esp. intracranial), HAS-BLED information, injury via accidents	Antiphospholipid antibody syndrome, lupus anticoagulant, residual thrombosis, pulmonary hypertension, family history of VTE
Russia	Alcoholism, hepatitis or other liver disease, old age	Thrombophilia, genetic mutations, advanced age, high risk of stroke, estrogen consumption
South Africa	Unstable INR, uncontrolled hypertension, prior bleeding episodes, concurrent antiplatelet therapy	Family history of VTE, thrombophilia (especially hereditary), obesity, old age, antiphospholipid syndrome
Sweden	History of bleeding, renal insufficiency, interaction with concurrent medication, massive PE	History of VTE, family history of VTE, signs of PTS, immobility, thrombophilia (depends on type)
Thailand	Prior bleeding, renal failure, anemia, thrombocytopenia, concurrent antiplatelet therapy, other comorbidities, advanced age	Male gender, prior VTE, massive PE
Vietnam	Unstable INR	Protein S, protein C, advanced age

BMI, body mass index; INR, international normalized ratio; PTS, post-thrombotic syndrome; TTR, time in therapeutic range (of INR); VTE, venous thromboembolism.

One of the reasons is that the DOACs, for this indication, are approved in Israel, but they're not in the health package yet for VTE. They are in the health package for atrial fibrillation, (...) but not for secondary prevention of DVT and PE. (...) [So, the DOACs] may be unaffordable to certain populations.

In Thailand, only warfarin is covered by public insurance, and DOACs are either paid for out of pocket or via private insurance. According to the Thai interviewee, civil servants constitute an exception to this rule as they receive special benefits in this regard:

There are different types of insurance. But, warfarin has universal coverage, so everybody can get warfarin. [...] So for conventional treatment: no problem. DOACs are

not covered by the government, so the patient has to pay with private insurance. [...] For some patients, [DOACs] may be more convenient, and they can pay. If they are civil servants they get reimbursed by the government. In those patients we might consider giving them a DOAC.

In South Africa, a particularly stark dichotomy was noted to exist between the public and private sectors. The South African interviewee recounted that in his country, it is exceedingly difficult for the financially destitute to get coverage for direct oral anticoagulants:

In the public sector [we prescribe] almost exclusively warfarin. [...] It's because of the fact that we don't have access to the other drugs in the public sector. And the fact that in the private sector the medical aid, the health insurance

TABLE 2 Reported average duration (in months) of secondary prophylaxis for different types of venous thromboembolism (VTE)

Country	Provoked VTE	Idiopathic VTE	Recurrent VTE
USA	3-6	≥6	Indefinite
Brazil	–	Indefinite	Indefinite
Canada	3	6	–
Hungary	6	12, indefinite	Indefinite
Israel	≥3	≥6	–
Netherlands	3	6	Indefinite
Philippines	3	36	Indefinite
Poland	–	6-12, indefinite	Indefinite
Russia	–	12	–
South Africa	≥3	≥9	Indefinite
Sweden	3, 6, 12	6-12, indefinite	Indefinite
Thailand	3	6-12	Indefinite
Vietnam	3	6	Indefinite

Commas indicate alternatives, while dashes denote ranges.

TABLE 3 Oral antithrombotics used in secondary prophylaxis of venous thromboembolism (VTE)

Country	Type of medication
USA	V, D, A
Brazil	D, V
Canada	D, V, A
Hungary	V, D
Israel	V, D
Netherlands	V, D, A
Philippines	V, D, A
Poland	D, V, A
Russia	V, D
South Africa	V, D
Sweden	D, V, A
Thailand	V, D, A
Vietnam	V, D

V, D, and A denote vitamin K antagonists, direct oral anticoagulants, and antiplatelets, respectively. They appear in order of estimated prescription frequency.

won't reimburse them unless you can show resistance to them. So it's financial. [...] Most of the public sector patients are indigent black people. And a large proportion of them are HIV positive. And they have no access to the direct oral anticoagulants. Other than under special motivation or great difficulty, but then we're not even sure they're going to get it.

In the Philippines, all drugs prescribed to outpatients have to be paid for out of pocket, which renders the DOACs unattainable at worst and

unattractive at best for most patients. The Filipino interviewee lamented that even warfarin is out of reach for some:

As long as it's medication in the outpatient phase of treatment, everything comes out of pocket. And you get reimbursed for medications [administered] during an admission. But if you're at the [service] stations, even those who we think can afford it, if they would want to buy their medications, the DOACs—considering all the advantages—over having to continue on with warfarin, the price of the DOACs still would be not acceptable to most. [...] Patients who are hard up... No matter how much they are convinced that they need to take the drug, they cannot afford them. Or they cannot comply with the monitoring. They ask for a discontinuation. But then I switch them to aspirin.

Table 3 lists the antithrombotics used in secondary prophylaxis of VTE, ordered by prescription frequency, as estimated by the interviewed physicians.

3.2.2 | Licensing status of pharmaceuticals

The local licensing status of pharmaceuticals represents a second practical barrier to treatment decision-making. After all, even if a DOAC might be a practitioner's first choice, its availability is not just contingent upon its supply chain, but also on its legal status.

The Russian interviewee related a situation where a drug's licensing status was mostly organized at the national level, but where local clinics and hospitals possessed the agency to make a case for the use of a drug for certain indications:

My decision to prescribe novel oral anticoagulants is based on availability and on the possibility to get a license for them. Dabigatran was licensed only for atrial fibrillation for two and a half years. We brought people to get approval from our ethics committee because we had a very high quantity of bleeding complications on vitamin K antagonists, because the monitoring of INR was very poor during this time. Then, of course, rivaroxaban got a license. So we became able to prescribe this medication.

3.2.3 | Pharmaceutical marketing

The Canadian interviewee suggested that aggressive pharmaceutical marketing often led to problems with therapy compliance in his country. When asked about therapy non-compliance, he stated the following:

The reason a patient's not compliant... I don't know if you have the same commercials [as we do] here [...], but here, we get awful commercials of bleeding risks with Xarelto, health suits, and everything. And they want to stop treatment; yeah that happens.

3.2.4 | Genetic profile of the populace

In some regions, populations were reported to be particularly predisposed to VTE on account of their genetic profile. As a consequence, thromboprophylaxis in these regions differed from that in other parts of the world. In Israel, for instance, thrombophilia was reported to afflict a much greater segment of the population than is common for many other parts of the world:

Thrombophilia is quite common here. [...] You get between 10-20% of the population that will have [factor V] Leiden, or prothrombin [G20210A] mutation. Then there is also a high prevalence of combined mutations, because these are quite commonly correlated in the population.

The Russian physician noted that in his city, other genetic factors carried more weight:

We found that quite a big quantity of people had [genetic risk] factors. I mean, for example, of course not [factor V] Leiden mutation or things like that, but PAI-1 gene for example. Or APOA1-apolipoprotein A1-in genes, very often were found in these patients.

In Hungary, the Romani population was reported to require different care than other groups of society:

We are with 10 million Hungarians. Of these 10 million, almost 1 million are [Romani]. Their prevalence of factor V Leiden mutations is higher. Thrombophilia is a bit higher in the [Romani] population.

3.2.5 | Climate

The Israeli interviewee noted that climate, although its role mostly goes unacknowledged by the literature, exerts a nontrivial impact on VTE treatment in Israel:

We also give more concern than the literature to hydration status, because we think that dehydration is an issue. We think it's a risk factor for VTE. And many of the patients [...] [have] very low fluid intake and temperatures here tend to be high. And people are getting dehydrated, so this is one of the things we see.

3.2.6 | Alcohol abuse

Alcohol abuse was uniformly considered to pose multiple issues to effective secondary prophylaxis in VTE. In regions where alcohol abuse is particularly prevalent, it follows that treatment becomes a great deal more complicated. The Russian interviewee remarked the

following on alcohol abuse in Russia, and how it affects VTE secondary prophylaxis decision-making in his country:

Usually after one year, if the patient is young, with an idiopathic DVT, without any risk factors like trauma, or estrogen consumption et cetera, and risk factors like obesity, we quit any treatment. Just observation. This situation was very common for patients who have a habit to consume alcohol. For them, in spite of the high risk, they decided to quit therapy, because the consumption of alcohol is a great risk in my city and in my country. [...] The high consumption of alcohol probably would be a main factor for me in my decision. Or [for] other doctors in my clinic.

3.2.7 | Drug-drug interactions

The Filipino interviewee reported that food supplement use is highly prevalent in the Philippines, and that these frequently interfere with VTE treatment:

Less than half of the patients will be taking some form of supplements—food supplements—that may not really reveal what the contents are. [...] Some of these supplements have some form of anticoagulant or anti-thrombotic that may cause some more bleeding in these patients. So we really have to emphasize to them that these concoctions, or these supplements—even if they're given for another condition—they actually interact with warfarin.

3.2.8 | Pre-existing comorbidity

In South Africa, incidence of human immunodeficiency virus (HIV) and tuberculosis (TB) is high, especially among the poor. The South African interviewee explained how in a majority of cases, physicians have to default to indefinite anticoagulation because of this fact:

At least 65% of our DVT [patients] are HIV-positive. [...] A lot of our public sector patients are HIV and TB-positive so they have to be treated for HIV and for TB. [...] Both those things [HIV and TB] cause DVTs. And those patients require long-term prophylaxis.

3.2.9 | Lack of access to reliable health care

Adequate thromboprophylaxis requires adequate resources. In countries that are overall less affluent, medical resources and facilities are often few and far between. Three interviewees mentioned how a lack

of access to reliable health care impedes adequate care for VTE patients in their respective countries.

The South African interviewee reported that treatment must sometimes be discontinued due to this barrier:

A patient might go to an area where we can't follow them up. So, like patients who go back to rural areas where there's no health care. [...] So sometimes we are forced to stop treatment.

The Filipino interviewee voiced the same concern, while also stating that anticoagulation in over half of social service patients is inadequately controlled for this reason:

There are 7100 islands, and a number of regions and provinces, and there are only, like, one provincial hospital and perhaps two private hospitals in a province. And we're not even sure how reliable the INRs are over there. [...] So, [lack of] access to INRs and the resources to shoulder the medications and INRs are quite common reasons for our social service patients not to be under anticoagulants. So, I'd say over 50% of social service patients on warfarin will not be really following the dosing or actually monitoring.

The physician from Brazil reported that this same issue precludes proper communication between physicians and patients, and has led to over-cautious anticoagulation therapy in his country:

What we have sometimes in Brazil is that the patients are from so far away that it's difficult for them, and difficult even for doctors outside the bigger cities, to control the INR. [...] I try to stay in contact with them [my patients], but sometimes they're from one or two thousand kilometers away. [...] And also, the doctors who are far from the bigger cities are not used to control adequately the INR in those kinds of patients. [...] They are afraid to keep the patient anticoagulated, so they mostly induce the patients to stay hypo[anticoagulated]-in a lower INR.

3.3 | Guidelines, protocols and risk scores

Eleven out of 13 (84.6%) interviewees indicated that they incorporate treatment guidelines in their decision-making with some frequency. The CHEST guidelines were mentioned a total of 8 times (61.5% of interviewees), equally as often as local guidelines. In addition, 50% of interviewees indicating use of local guidelines stated that they simultaneously reference the CHEST guidelines. The interviewees representing Poland, South Africa, Sweden, and Thailand explicitly noted that their local guidelines were either abbreviated versions of the CHEST guidelines, or at least largely based on these same guidelines.

Most interviewees considered the guidelines useful referential frameworks, but stated that they would deviate from the guidelines'

recommendations in cases where they considered these insufficient or inappropriate based on current published evidence, or even personal experience. As area-specific circumstances were also not always accurately reflected in general treatment guidelines, some recommendations were considered inapplicable. Finally, some physicians said of the guidelines that they were simply too unwieldy for everyday use. According to these physicians, the development of VTE-specific risk scores could benefit practitioners who are uninclined to turn to a hefty manual to inform their decisions.

Five (38.5%) of the interviewed physicians stated that they regularly employ risk scores to help inform decision-making. The HAS-BLED risk score¹⁴ was deemed particularly useful; 4 out of 5 interviewees indicating risk score use stated that they frequently employed the HAS-BLED score. All four HAS-BLED users (Brazil, Canada, Poland, the Netherlands) indicated cognizance of the score's original purpose, yet hailed its usefulness and applicability to bleeding risk assessment in VTE, especially in the absence of a dedicated VTE bleeding risk score. Other risk scores that were mentioned by the interviewees were the "Men continue and HER DOO2" clinical decision rule proposed in the REVERSE¹⁵ cohort study (Canada), the Padua risk score for VTE (Philippines)¹⁶ and the Caprini score for DVT (Philippines).¹⁷

4 | DISCUSSION

Although VTE treatment guidelines had their inception in the desire to streamline and standardize global treatment practices, this study suggests that physicians worldwide still struggle to reconcile what is outlined in these guidelines with what they encounter in clinical practice. Even if the interviewees' views on treatment were generally in line with the recommendations outlined in the major treatment guidelines, area-specific obstacles often hindered physicians in providing the thromboprophylaxis they deemed most appropriate. This was especially apparent with regard to the discussion on optimum treatment duration. Recall the South African situation, where the typical comorbidity profile of a VTE patient is such that there is no point in even considering anything other than indefinite treatment. Or a country like Russia, where alcoholism is so prevalent that many patients prefer a higher risk of VTE recurrence over longer-term treatment.

As for the question of which drug to prescribe, two specific issues dominated the discussion. Firstly, physicians were limited in their treatment options by the cost of drugs and the health insurance plans available to their patients. In the most extreme case, that of the Philippines, patients often had no other choice but to take aspirin due to the high cost of VKAs and DOACs. In VKA-majority countries, too, physicians indicated that they were constrained in their options: even if some felt that VKAs fell short in a number of ways, and that prescribing a DOAC might be preferable in some cases, the relatively high cost of these drugs prevented them from doing so in any case. The reason for many of the interviewed physicians to prefer DOACs was twofold: the desire to unburden patients, and more importantly, the need to improve therapy efficacy. In many countries, INR monitoring is patently

inadequate, resulting in less efficacious treatment. Moreover, for many patients in these same countries traveling to a remote hospital or clinic is often difficult as well. The fixed-dose DOACs would clearly obviate these issues. An additional benefit of DOACs versus VKAs would be the relative lack of dietary and drug interactions, which would benefit countries like Russia and the Philippines. Notwithstanding the other ways in which VKAs and DOACs exhibit significant differences that one should expect to influence decision-making in this regard (eg, the absence of antidotes for all but one of the DOACs, which renders bleedings riskier), this convenience argument is one that carried considerable weight to the interviewees.

The second most brought up issue was that of therapy non-compliance. As the interview excerpts in this paper show, there were effectively two reasons for non-compliance under the status quo of secondary prophylaxis of VTE: either the patient perceived treatment as too much of an encumbrance, or they had insufficient access to the health care they required.

4.1 | Limitations

Given the small sample size, we acknowledge that the views expressed in these interviews may not be exhaustive or representative for all specialists in the surveyed countries. Additionally, the fact that interviewees were selected by a single individual (MHP) may have impacted on the selection of the final sample.

5 | CONCLUSION

With the expert interviews that formed the basis of this study, our aim was to elucidate the varying real-world experiences of VTE secondary prophylaxis decision-making in a contextually disparate set of countries around the world. Understanding when and where risk factors coincide, and when, where and why they vary could benefit medical practitioners and policymakers striving to implement better treatment standards. In our view, the interviews presented in this paper raise the question whether universal guidelines are sufficient to aid the decision-making of physicians facing various local idiosyncrasies. Our tentative conclusion in this regard is that generalizing across highly dissimilar clinical realities will likely not result in universally applicable recommendations, and that a more decentralized approach may be preferable. Although the universal guidelines currently in use clearly serve their purpose in many ways, physicians may benefit from supplemental local guidelines that are more closely attuned to situations they are familiar with. In any case, these interviews hint at a multiplicity of reasons why adherence to the existing guidelines is still less than optimal.

AUTHOR CONTRIBUTIONS

MHP selected interviewee candidates. A single interviewer, VTC, conducted all interviews. All recording, transcribing, coding and editing was conducted by VTC. The results were interpreted by VTC and MHP.

RELATIONSHIP DISCLOSURES

None of the authors have any disclosures relevant to this paper.

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