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Clinical pharmacist assisted thromboprophylactic optimization in general surgical patients

Évaluation des pratiques professionnelles et pharmaciens cliniciens en Inde

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Summary

Introduction. Practice of prophylaxis against venous thromboembolism (VTE) following surgical procedures has been in the scenario for about half a century. Despite the surging evidence regarding the clinical and economic efficacy, the practice remains underutilized. The study was aimed at optimizing the prophylactic practices for prevention of VTE in the general surgical patients in a tertiary care hospital using a pharmacist assisted multi-strategy intervention.

Methods. The prospective quasi-experimental study was conducted in general surgical department of a tertiary care hospital in Kerala. The initial audit phase was targeted at assessing the prevailing prophylactic practices and its adequacy in relation to American College of Chest Physicians (ACCP) guidelines. This was followed by an educational phase where physicians were provided the feedback and institutional protocol. The third phase involved intervention through patient risk stratification and prophylactic recommendation by pharmacist concomitantly with reaudit.

Result. The overall non-compliance to the therapy decreased from 52% in the control phase to 20% in the intervention phase with $P = 0.0009$. The partial compliance to therapy reduced from 40% in the control phase to 32% in the intervention phase with $P = 0.4047$. Total compliance to therapy increased from 8% in the control to 48% in the intervention stage and the difference was found to be significant with $P < 0.0001$.

Discussion. The study was effective in increasing the overall compliance to the ACCP 9th guidelines by 40% and the average duration by 1.61 days. Clinical pharmacist assisted multi-strategy

Résumé

Introduction. Les recommandations concernant la prévention du thrombo-embolisme veineux (VTE) postopératoire datent d'un demi-siècle. Malgré l'évidence de l'efficacité clinique et économique, les recommandations restent encore parfois peu ou mal utilisées. L'étude a visé à optimiser les pratiques de prévention du VTE chez les patients hospitalisés en chirurgie générale dans un hôpital de soin possédant des pharmaciens cliniciens.

Méthodes. L'étude quasi expérimentale éventuelle a été conduite dans le département de chirurgie générale d'un hôpital du Kerala. La phase initiale a été un audit des pratiques prophylactiques existantes et leur adéquation avec les directives cliniques de l'American College of Chest Physicians (ACCP). Ceci a été suivi par une phase éducative où les pharmaciens cliniciens ont présenté le résultat d'audit aux médecins avec un protocole institutionnel. La troisième phase a impliqué une intervention des pharmaciens selon le profil de risque du patient avec un rappel de la recommandation prophylactique et dans la foulée un nouvel audit.

Résultats. Le non-respect global à la thérapie a diminué de 52 % dans la phase de contrôle à 20 % dans la phase d'intervention ($p = 0,0009$). La conformité partielle aux directives cliniques a été réduite de 40 % pour la phase de contrôle jusqu'à 32 % pour la phase d'intervention ($p = 0,4047$). La conformité totale aux directives cliniques s'est accrue significativement de 8 % pour le contrôle jusqu'à 48 % pour l'étape d'intervention ($p < 0,0001$).

Discussion-conclusion. La stratégie utilisée s'est avérée efficace pour améliorer la conformité globale aux 9^{es} directives ACCP

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interventions were effective in enhancing the appropriateness of the prophylaxis as per the ACCP recommendations.

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(+ 40 %) et la durée moyenne à 1,61 jours. Les interventions du pharmacien clinicien se sont avérées efficaces pour assurer le respect des directives cliniques de l'ACCP.

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Mots clés : Pharmaciens, Thromboembolisme, Prévention, Audit, Chirurgie générale, Anticoagulants

Introduction

Venous thromboembolism (VTE) is a disease that encompasses deep vein thrombosis (DVT) and pulmonary embolism (PE) and pose conspicuous threat to both hospitalized and non-hospitalized patients. Oftentimes, VTE remains asymptomatic and underdiagnosed, culminating in chronic complications and truncated survival [1]. Among the several threats associated with VTE precipitation in hospitalized patients, the risk associated with surgical procedures are one of the most frequently confronted entity. Despite centuries of understanding regarding the potential for general surgical procedure to instigate VTE, it is often shrouded by its orthopedic counterpart by virtue of the latter's propensity for DVT [2]. It has been estimated that 14 to 16% of all symptomatic VTE were diagnosed in the post-surgical setting in the Western world, and interestingly, general surgical candidates comprised half of this post-surgical VTE pool [3]. Patients undergoing major surgical procedure is estimated to have 20-fold risk enhancement for VTE and despite provision of pharmacological prophylaxis, the rate of DVT remains as high as 4.6 to 8%. Many surgeons perceive the postoperative developments of DVT as an uncommon entity even after they notice the signs and symptoms tend to overlook the linkage to probable DVT. The results of surveys among surgeons have revealed that, in many hospitals, prophylaxis for deep vein thrombosis and pulmonary embolism is not yet standard practice, despite overwhelming evidence of the benefits to patients when properly used [4].

Of the various strategies in existence at countering VTE after surgery, primary/active prevention is the most preferable and involves use of risk assessment models (RAMs) to predict the patient's chance of contracting VTE and categorizing them as low, moderate and high risk. In the absence of rigorously developed and extensively validated risk assessment models, American College of Chest Physicians (ACCP) 9th Antithrombotic guideline has recommended use of Caprini score for prophylactic decision-making [5,6].

In the contemporary perspective, "appropriate VTE prophylaxis" denotes appropriate drug, dose, and duration of therapy.

Regardless of decades of evidence highlighting the effectiveness of pharmacologic and mechanical methods to prevent VTE in hospitalized at-risk patients, current Indian and international prevention strategies remain suboptimal.

A multi-national cross-sectional study, conducted in 358 hospitals across 32 countries, estimated that 64.4% surgical inpatients were at risk of VTE and only 58.5% received adequate prophylaxis; indicating a low prophylaxis rate despite the high prevalence of at-risk VTE patients [7]. The concept of "appropriate VTE prophylaxis" has recently emerged and denotes appropriate drug, dose, and duration of therapy. Although there have been decades of evidence highlighting the effectiveness of pharmacologic and mechanical methods to prevent VTE in hospitalized at-risk patients, current national and international prevention strategies remain suboptimal. National organization positions are shifting to include omission of appropriate care as an adverse event or adverse drug event. Therefore, if the patient did not receive any prophylaxis despite having indication, it can be categorized under adverse drug event. Recent data revealed that in-hospital pharmacy-driven VTE prevention programs can enhance the use of optimal thromboprophylaxis and subdue thromboembolic episodes. VTE prophylaxis programs and anticoagulation management, especially in hospitalized settings, are opportunities that pharmacists can take advantage of in their respective health care settings to reduce unnecessary morbidity and mortality from this disease. Because of their expertise in pharmacotherapy, pharmacists are poised to take a leadership role in VTE prevention programs to positively affect patient care within hospitals and beyond [8]. Physician knowledge, attitudes, and perceptions are partially responsible for the gap between actual practice and international guidelines. Healthcare facilities should evaluate their adherence to international VTE treatment guidelines and develop strategies involving both educational and active interventional strategies to optimize antithrombotic therapy [9].

The following study was aimed at optimizing the prophylactic practices for prevention of VTE in the general surgical patients in a tertiary care hospital using a pharmacist-assisted multi-strategy intervention.

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