PERSPECTIVE

A global survey on thromboprophylaxis use in urological surgery

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ABSTRACT

Perioperative thromboprophylaxis is frequently used but not consistently in urological surgery. To describe the variations in thromboprophylaxis utilization during urological surgery throughout international practice.

Participants, setting, and design In order to better understand how urologists in Canada, Finland, and Japan use mechanical and pharmaceutical thromboprophylaxis during urological cancer surgeries (radical cystectomy, radical prostatectomy, and radical nephrectomy), we conducted a scenario-based survey. The poll included patient profiles that represented a range of venous thromboembolism risk, and the respondents discussed their clinical workflow.

Measurements of results and statistical analysis Procedure-specific stratification was done for the percentage of respondents who regularly used mechanical, pharmaceutical, and extended pharmaceutical prophylaxis. Characteristics connected to the usage of thromboprophylaxis were found by logistic regression.

Key Words: *Surgical care; Virtual reality; Oral surgery; Anxiety.*

INTRODUCTION

A Dangerous and occasionally fatal side effect of surgery is venous thromboembolism, which includes deep vein thrombosis and pulmonary embolism. In surgical patients, pharmacological prophylaxis reduces the relative risk of venous thromboembolism by around 50%, but it also raises the relative risk of significant postoperative hemorrhaged. In light of this, using pharmaceutical prophylaxis involves making a choice between increasing bleeding and reducing venous thromboembolism. A further issue with the use of thrombi-prophylaxis in urology is a difference in clinical practice across national borders. This difference may be explained, at least in part, by a lack of knowledge of the information addressing the procedure- and patient-specific baseline risks of thrombosis and bleeding that is necessary to make an informed decision about the use of thromboprophylaxis. The absence of prior guidelines pertaining to various urological operations and conflicting advice from various guidelines may also be factors. We carried out an international survey (International Survey on Use of Thromboprophylaxis in Urological Surgery) to better understand regional variations in the use of thromboprophylaxis in urological surgery. Our aim was to identify regional and international differences in the use of thromboprophylaxis for common urological operations.

In order to get practice prescribing both pharmacological and mechanical thromboprophylaxis for radical cystectomy, open and robotic radical prostatectomy (RP), and radical nephrectomy, we created a questionnaire with three scenarios. The survey provided brief patient profiles that indicated a range of VTE risks using the patient risk factor model used in the European Association of Urology recommendation on thromboprophylaxis in urological surgery. Outlines the level of VTE risk associated with each scenario based on systematic reviews. Participants in the survey were not able to access this information because it was not included in the survey. Participants used response options with single-answer multiple choices to indicate their usual practice for each patient profile. In addition, respondents' age, gender, and urological profile (resident/consultant) were reported. The questionnaire's items were created by a team of methodologists and clinicians, who also pilot tested and reviewed it with a group of board-certified urological surgeons from Canada, Finland, and Japan to determine its face validity. Before the first procedure- and patient-specific thromboprophylaxis guideline in urology, we conducted this

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survey. Urologists from Canada, Finland, and Japan who are currently in practice were invited to participate in the survey. We invited urologists from Canada to the Canadian Urological Association's annual meeting. We located urologists in Finland and Japan using the databases of the Finnish Urological Association and the Japanese Urological Association, respectively. At the end of the plenary sessions and during conference breaks, urologists in Canada filled out the survey. As soon as the surveys were finished, we gathered them, and the denominator for determining the response rate was the number of urologists present at the meeting (the use of the number of urologists attending the meeting as the denominator likely underestimates the response rate). A postal letter inviting participation was sent to all urologists in Finland. A sample of urologists in Japan was chosen at random from the national membership list and sent participation invitations by mail. We estimated the percentage of usage of mechanical prophylaxis, pharmaceutical prophylaxis, and extended pharmaceutical prophylaxis for each patient profile and assessed the results using chi-square analysis for statistical significance. The definitions of extended prophylaxis in the three countries and Supplementary corresponded to the length of hospital stays because hospital stays vary greatly between nations (considerably longer in Japan than in Canada or Finland; Supplementary), and as a result, the implications of prophylaxis during hospital stays vary depending on the jurisdiction (Supplementary material). To ascertain whether the urological profile was connected to any extended prophylaxis, pharmacological prophylaxis, or mechanical prophylaxis, we performed multivariable logistic regression adjusted for the included nations. We use a threshold value in the multivariable logistic regression and present the odds ratio and 95% confidence interval. Every analysis was carried out using the SPSS version. Study in urology to look into the differences in thromboprophylaxis use amongst nations on various continents. This extensive international survey found significant regional and national differences in the use of pharmaceutical VTE prophylaxis during hospital stays as well as in the use of extended prophylaxis after discharge. Pharmacological prophylaxis was used often by Canadian and Finnish urologists, but far less so by Japanese responders. There was substantially less diversity in the reported usage of mechanical prophylaxis for urological procedures both within and across nations. Finally, we discovered no variations in the application of mechanical, pharmaceutical, or extended pharmaceutical prophylaxis between resident and consultant urologists. The target demographic of Canadian, Finnish, and Japanese urologists was represented in the study's population, which is strong in terms of age and gender distribution. The high level of questionnaire completion and a satisfactory participation rate are additional strengths of our study. By using clinical case studies that were pertinent to recent clinical practice, we evaluated the use of thromboprophylaxis. Our research has some flaws. First off, because the purpose of this study was to provide an overview of practice patterns, we are unable to determine the root causes of practice variation. The perception of a reduced risk in Japan may be the reason for a lesser usage of pharmaceutical, but not mechanical, prophylaxis. This is something we did not ask respondents about. It is unknown if such disparities in occurrence genuinely exist. Second, actual hospital practices and the replies urologists gave to the study's scenarios might be different. Additionally, we did not gather information on the respondents' areas of specialization because more junior physicians than operating surgeons frequently administer thrombi- prophylaxis. It is unclear if this method distorted estimations. Third, the sample techniques we employed for Canada were different from those we used for Finland and Japan. Our objective of including a representative sample in each nation informed this practical choice. Fourth, many people don't follow some of the suggested processes. However, they are still allowed to take part in the recommendation of thrombi- prophylaxis. There aren't many older studies that looked at perioperative VTE prophylactic usage. According to a British study, all units routinely used low-molecular-weight heparin prophylaxis for the inpatient period following RC and used perioperative prophylaxis after RP. The respondents to the study included consultant urologists, residents, and 35 urology clinical nurse specialists working in pelvic cancer centers. After RC and after RP units, low-molecular-weight heparin was routinely administered to all patients (researchers did not distinguish between open and robotic procedures). Men who had open RP were given mechanical prophylaxis solely, pharmacological prophylaxis only, both mechanical and pharmacological prophylaxis, or no prophylaxis at all, according to a US database study of men who had undergone RP. The scope of this investigation did not include discharge prophylaxis. Another US study polled American Urological Association members. Approximately for RP, those who were invited to respond reported using any thromboprophylaxis "often" or "always." Post-discharge prophylaxis was not discussed by the authors. Although the strength of the conclusions drawn from these studies, which are consistent with our findings, is constrained by their small sample sizes, retrospective database designs, and low response rates, there is still little doubt that thromboprophylaxis practice varies significantly both within and between nations. The practice variation that we found is probably a result of various things. First, the evidence used to support decisions for VTE prophylaxis is not of high quality and can therefore be interpreted in a variety of ways. Second, the inconsistent recommendations made by a number of influential VTE guidelines in various nations may also be explained by the low-quality evidence. For instance, well-known VTE guidelines from the American College of Chest Physicians and the National Institute for Health and Care Excellence would classify all survey cases as "abdominopelvic," rather than taking individual urological operations into account separately. Thirdly, urologists in some areas might also want to leave decisions about the use of thromboprophylaxis up to colleagues from other fields who can consider the trade-off between bleeding and VTE from a no-surgeon perspective. Given regional variations in body mass index or age at surgery that may predominate, it is possible that VTE risk varies by population, with prophylactic choices reflecting local risk correctly. Before systematic reviews addressing estimates of absolute risks of symptomatic VTE and significant bleeding in urological surgery and an EAU guideline addressing thromboprophylaxis, the first procedure and patient risk factor-specific guideline in urology, were published, we conducted the survey. As a result, respondents could not have been influenced by these recommendations from the guidelines, and this poll can be used when a benchmark for monitoring changes in practice pattern as more urology-specific VTE guidelines are disseminated This evidence-based, procedure-specific guideline, which has also been made

accessible as a free infographic, may be taken into account by healthcare providers across all countries when making clinical decisions. So doing would justify the practice and possibly lessen this significant variation. Extended pharmacological thromboprophylaxis has a demonstrated net advantage for various major procedures in individuals at high risk of VTE. Our findings imply that practices in Finland and Canada adhere more closely to the EAU recommendation for low bleeding risk and high-risk VTE. The EAU guideline advises against the use of prophylaxis in robotic prostatectomy without lymphadenectomy for low-risk patients but recommends extended pharmacological prophylaxis in the open method. Regardless of the approach (open vs. robotic), participants from Canada and Finland typically reported using pharmacological prophylaxis while in the hospital but not after discharge, whereas one in seven Japanese urologists after an open approach and one in three after a robotic approach reported doing so. Variability in practice shows a lack of adherence to professional recommendations, which should be the optimal course of action for the majority of patients. Therefore, raising awareness of the EAU guidelines—the first to be fully evidence-based and tailored to a procedure—may enhance patient care.

Guidelines for preventing perioperative VTE depend on a thorough knowledge of trade-offs that are significant for patients and the caliber of the supporting data. Therefore, enhanced clinical guidance and patient care will be the outcome of future efforts to strengthen the body of evidence, particularly with the conduct of high-quality trials and observational research. Future surveys are also required to track adjustments in perioperative thromboprophylaxis practice brought on by the release of new advice. Through a comprehensive international survey, we were able to identify significant regional and international differences in the use of pharmaceutical VTE prophylaxis. This variance was present in the administration of prolonged prophylaxis following discharge as well as pharmacological prophylaxis during the hospital stay. The reported usage of mechanical prophylaxis for urological procedures varied substantially less and was consistently high in all situations. Evidence-based guidelines that have been translated into practice may lessen harmful global diversity in practice, which could improve patient care in the future.