Familiarity and Self-Reported Compliance with American Urological Association Best Practice Recommendations for Use of Thromboembolic Prophylaxis among American Urological Association Members

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Abbreviations and Acronyms

AUA = American Urological Association

BPS = Best Practice Statement

DVT = deep vein thrombosis

LMWH = low molecular weight heparin

PTE = pulmonary thromboembolism

RC = radical cystectomy

SQH = subcutaneous heparin

TP = thromboprophylaxis

UOLRS = urological oncologists and/or laparoscopic/robotic specialists

VTE = venous thromboembolism

Purpose: Thromboprophylaxis with subcutaneous heparin or low molecular weight heparin is now an integral part of national surgical quality and safety assessment efforts, and has been incorporated into the current AUA Best Practice Statement. We evaluated familiarity and compliance with the AUA Best Practice Statement, assessed practice patterns in terms of perioperative thromboprophylaxis and specifically examined self-reported compliance in high risk patients undergoing radical cystectomy.

Materials and Methods: An electronic survey was sent to AUA members with valid e-mail addresses (10,966). Associations between AUA Best Practice Statement adherence and factors such as urological specialty, graduation year and guideline familiarity were assessed using chi-square analyses and generalized estimating equations.

Results: With 1,210 survey responses the largest group of respondents was urological oncologists and/or laparoscopic/robotic specialists (26.0%). This group was more likely to use thromboprophylaxis than nonurological oncologists and/or laparoscopic/robotic specialists in high risk patients (OR 1.3, CI 1.1–1.5). Respondents aware of the AUA Best Practice Statement guidelines (50.7%) were more likely to use thromboprophylaxis (OR 1.4, CI 1.2–1.6). Although 18.1% of urological oncologists and/or laparoscopic/robotic specialists and 34.2% of nonurological oncologists and/or laparoscopic/robotic specialists avoided routine thromboprophylaxis in patients undergoing radical cystectomy, the former were more likely to use thromboprophylaxis ($p < 0.0001$) than other respondents. Urologists graduating after the year 2000 used thromboprophylaxis in high risk patients undergoing radical cystectomy more often than did earlier graduates (79.2% vs 63.4%, $p < 0.0001$).

Conclusions: Although younger age and self-reported urological oncologist and/or laparoscopic/robotic specialist status correlated strongly with thromboprophylaxis use, self-reported adherence to AUA Best Practice Statement was low, even in high risk cases with clear AUA Best Practice Statement recommendations such as radical cystectomy. These data identify opportunities for quality improvement in patients undergoing major urological surgery.

Key Words: prevention and control; heparin; practice guidelines as topic; societies, medical; thromboembolism

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Deep vein thrombosis and pulmonary thromboembolism are largely preventable complications that occur during the postoperative period. Without perioperative TP the risks of DVT (40% to 80%), PTE (4% to 10%) and fatal PTE (1% to 5%) are significantly increased.[1] In particular, patients undergoing urological procedures are considered to be at an increased risk of VTE due to factors such as advanced age, the presence of malignancy, a history of neoadjuvant chemotherapy and/or the need for extensive pelvic dissection.[2] In such patients the risk of DVT and PTE without perioperative TP has been estimated at 33% and 1%, respectively.[3] As a result, perioperative TP is an important aspect of prevention that improves perioperative outcomes in urological surgical patients. In fact, the Joint Commission mandated VTE prophylaxis to be a patient safety goal and that the metric of compliance be tracked as a hospital's core performance measure.[4]

In 2008 the AUA released a BPS regarding the use of thromboprophylaxis after urological procedures.[5] Due to the large number of different procedures performed by urologists, the categories of 1) transurethral surgery, 2) anti-incontinence and pelvic reconstructive surgery, 3) laparoscopic urological and/or robotic assisted laparoscopic procedures and 4) open urological surgery were developed. Recommendations for DVT prophylaxis varied within each category. Procedures were categorized from lowest to highest risk in terms of minor surgery (eg less than 30 minutes with immediate ambulation) vs major surgery (eg laparotomy, laparoscopy and pelvic surgery), while patient factors were risk stratified based on medical comorbidities and thromboembolic risk factors (Appendixes A1 and A2, http://jurology.com/). Despite these efforts to systematically individualize recommendations for each category of urological patient, given the paucity of robust data, many of the recommendations outlined by the AUA BPS are nonspecific, and leave the choice and intensity of VTE prophylaxis up to individual surgeon judgment.[5] Nevertheless, it is unequivocally recommended that high risk patients undergoing radical cystectomy receive perioperative chemical TP. Therefore, we focused our analysis on rates of thromboprophylaxis use in patients undergoing RC.

Because awareness and adherence of AUA physician members to the recommendations of the AUA BPS were not known, we surveyed all AUA urologists to determine practice patterns regarding the use of perioperative chemical TP, and further characterized the use of chemical TP for high risk patients undergoing RC.

METHODS

Recruitment

A web based, 11-question survey instrument was developed after review of the surgical literature regarding the clinical practices of perioperative TP (Appendix B, http://jurology.com/). Surveys were sent via e-mail to all AUA urologists with a valid e-mail address, including international practitioners. No proxies or substitutions were accepted. The initial survey was sent in January 2011, followed by a reminder survey shortly thereafter for nonrespondents. Respondents were offered no financial incentive to reply. All data were de-identified and analyzed in aggregate to preserve respondent anonymity.

Survey

All respondents were asked to rate the frequency of their use of chemical TP (eg SQH or LMWH) through a 5-point Likert scale on a variety of procedures ranging in complexity from diagnostic cystoscopy to radical cystectomy. A distinction in TP use based on open and minimally invasive techniques was also assessed. The 5-point scale included the frequencies of never, not frequently, sometimes, frequently and always. Each procedure was placed in the context of a patient with or without prothrombotic risk factors (eg immobility, history of thrombosis, history of malignancy and/or cancer treatments, estrogen therapy, obesity and smoking). Furthermore, respondents were queried on familiarity with the recently published AUA BPS guidelines.

Demographic information was requested of all respondents including year of graduation (including residents with expectant graduation dates), any area of specialty (including general urology, urological oncology, laparoscopy and robotics, female/pelvic medicine, infertility, trauma/reconstruction and other) and respective geographic region of practice. Groups were combined into UOLRS or nonUOLRS for ease of analysis. To analyze geographic data the groups were combined into urologists from the United States and urologists from outside the United States. Respondents were also categorized into those graduating before the year 2000 and those graduating in or after 2000.