Original Article

Urologist's role on smoking cessation counseling in patients presenting with asymptomatic hematuria: single academic institution experience

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Background: Bladder cancer is known to be strongly associated with smoking tobacco products. Urologists thus have an imperative role in providing smoking cessation counseling to patients to prevent the development of bladder cancer, recurrence, and other morbidities associated with smoking. Asymptomatic hematuria is often a presenting clinical symptom that warrants further investigation. This study aims to determine if smokers who have an episode of asymptomatic hematuria are more likely to quit smoking if urologists counsel them on formal smoking cessation.

Methods: We completed a retrospective chart review of patients who presented for asymptomatic hematuria at our institution between January 2017 and March 2020. A total of 435 patients were identified, 134 of which were active smokers at the presentation time. We recorded smoking status at initial presentation, documentation of smoking cessation counseling, and smoking status at one year follow-up. Fischer's exact test was used for analysis. Statistical significance was set by convention at $P<0.05$.

Results: The percentage of patients presenting with an episode of asymptomatic hematuria that quit or cut back at one year follow-up was 24.2% [95% confidence interval (CI): 13.8%, 34.7%]. In assessing the effect of formal smoking cessation counseling, 33.3% of patients with documented smoking cessation counseling quit or cut back at one year, compared to 22.8% of patients with no documented counseling. However, these findings were not statistically significant ($P=0.68$). Of note, smoking cessation counseling was recorded in 19 active smokers (14.2%), and 68 active smokers (50.7%) did not receive follow-up at one year.

Conclusions: Smoking cessation remains a challenging endeavor for both patients and urologists. Formal counseling did not significantly contribute to quitting rates among patients, and rates of documented counseling from providers were unsubstantial. Urologists should use hematuria work-up visits as an opportunity to counsel patients on smoking cessation.

Keywords: Urologist; smoking; cessation; counseling; hematuria

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Introduction

Asymptomatic hematuria is one of the most common urologic diagnoses, accounting for over 20% of urologic evaluations (1). Microhematuria as ≥3 red blood cells per high-power field on microscopic evaluation. The differential diagnosis encompasses a wide range of conditions, but importantly, can be the presenting symptom of urologic malignancy. Urologic malignancies account for 0–11% of cases of asymptomatic hematuria, and smoking tobacco is a well-established risk factor for urologic cancers (2). Smoking status is also strongly associated with bladder cancer risk, tripling in current smokers [summary odds ratio (SOR) =3.14] and doubling in former smokers (SOR =1.83) when compared with non-smokers (3). In addition, smoking status is strongly correlated with disease recurrence (4,5). Smoking also increases the risk of kidney cancer and prostate cancer, with long-term smokers at greater risk for more aggressive and advanced disease (6).

Smoking cessation is a challenging topic for any physician; however, there are several established benefits to quitting, particularly for patients with urologic disease. In patients with bladder cancer, the risk of smoking-attributable death is halved if a person stops smoking by the age of 50 years, and essentially disappears if stopped before age 30 years. However, bladder cancer risk in patients who have a smoking history never completely vanishes, as the risk for former smokers always remains higher than those who never smoked, even 30 years after quitting. Regarding disease recurrence, mortality after radical cystectomy, and adverse pathological responses to cisplatin-based neoadjuvant chemotherapy, current smokers carry the highest risk (7).

The role of urologists in smoking cessation counseling has been brought forth with greater frequency in recent years. The presentation of asymptomatic hematuria may serve as an opportune "teachable" moment to discuss patients' smoking habits. To date, there have been no studies in the literature relating asymptomatic microscopic hematuria and outcome improvements. The primary aim of this study was to examine practice patterns at our institution regarding smoking cessation counseling and to assess whether formal counseling from a urologist had a significant impact on patients' smoking habits. We present this article in accordance with the STROBE reporting checklist (available at https://tau.amegroups.com/article/view/10.21037/tau-23-592/rc).

Highlight box

Key findings

- Approximately 1 in 4 patients with new asymptomatic hematuria quit or cut back after one year.
- Roughly 1 in 3 patients with asymptomatic hematuria who received smoking cessation counseling quit or cut back after one year.

What is known and what is new?

- Smoking is a known risk factor for urological cancers and their reoccurrence.
- Patients who receive formal smoking cessation counseling from urologist are more likely to quit or reduce smoking.

What is the implication, and what should change now?

- Urologist should utilize new diagnosis of hematuria to provide smoking cessation counseling that can ultimately lead to a decrease in development of bladder cancer and other urological morbidities associated with smoking.

Methods

We completed a retrospective cohort study by chart review of patients who presented for asymptomatic hematuria within the University of Louisville Health system between January 2017 and March 2020. Patients were identified based on International Classification of Diseases (ICD)-10 diagnosis coding for various forms of hematuria (R31.1—benign essential microscopic hematuria; R31.2—other microscopic hematuria; R31.9—hematuria, unspecified). We recorded smoking status at initial presentation, documentation of smoking cessation counseling, and smoking status at one year follow-up. Patient selection flowchart shown below in *Figure 1*. The study was conducted in accordance with the Declaration of Helsinki (as revised in 2013). The study was approved by the Institutional Review Board of the University of Louisville (No. 19.1230) and informed consent from patients was not required due to the retrospective nature of the study.

Statistical analysis

Fischer's exact test was used for analysis. Statistical significance was set by convention at $P<0.05$. The greatest weakness in our study was a potential reporting bias due to lack of follow-up and documentation regarding smoking cessation counseling. In these instances, we are entirely unable to conclude whether or not these conversations took place; only that the conversations were undocumented. In the future, part of the solution to improving outcomes for

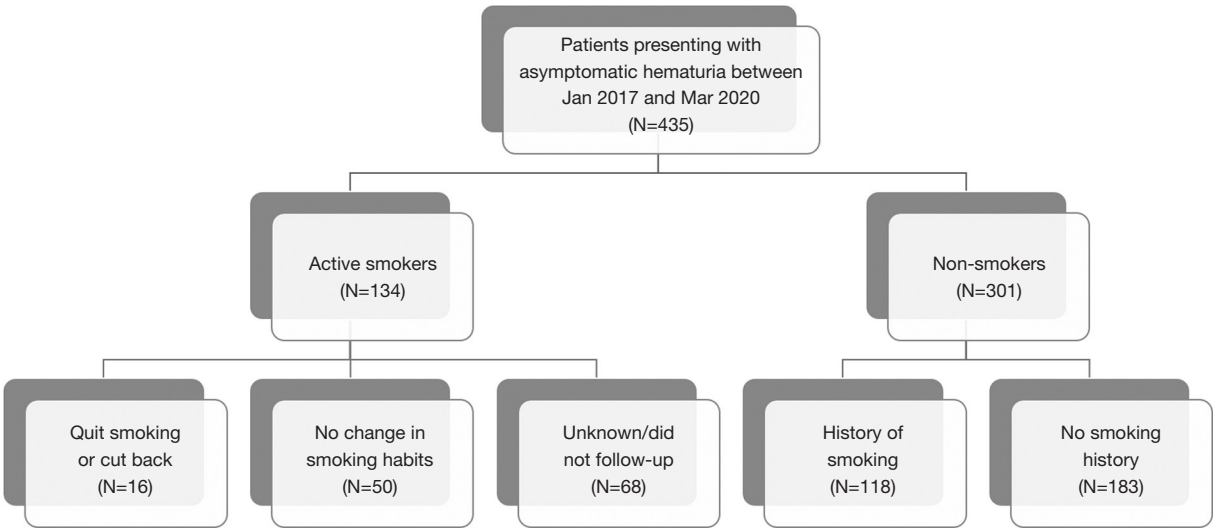

Figure 1 Patient selection flowchart.

hematuria patients may include more detailed notation of conversations related to smoking cessation counseling.

Results

A total of 435 patients were identified, 134 of which were active smokers at the time of presentation. Of the 134 patients that were active smokers, 68 (50.7%) did not receive follow-up at one year. Statistical analysis of smoking habits at one year was then performed for the remaining 66 patients that were active smokers at the time of presentation. The percentage of patients initially presenting with an episode of asymptomatic hematuria that had quit or cut back at one year follow-up was 24.2% [95% confidence interval (CI): 13.8%, 34.7%]. In assessing the effect of formal smoking cessation counseling, 33.3% of patients with documented smoking cessation counseling quit or cut back at one year, compared to 22.8% of patients with no documented counseling who had also quit or cut back at one year. However, these findings were not statistically significant (P=0.68). Of note, smoking cessation counseling was only documented in 19 of the total 134 active smokers (14.2%).

Discussion

Increasingly, the role of urologists providing counseling to patients is being recognized as an opportunity to improve care. The American College of Surgeons (ACS) has published a policy statement entitled "*The effects of tobacco use on surgical complications and the utility of smoking cessation counseling*". In it, they discuss how the perioperative time is a critical opportunity to educate patients on their role in improving their own surgical outcomes and how smoking can impact the success of their operation. The ACS emphasizes that surgeons should play an active role in smoking cessation counseling with their patients (6). The urologic world, too, is recognizing this factor, as the number of PubMed articles on the topic of smoking has grown remarkably, with hundreds of references in the past 10 years alone.

Historically, urologists have cited a number of barriers that have prevented them from incorporating smoking cessation counseling into their practice. A 2008 survey of members of the American Urological Association revealed that more than half of American urologists never discuss smoking cessation with bladder cancer patients, while only a fifth report always providing counseling. Of the urologists who reported that they never discuss smoking cessation, 40% believed that cessation may not significantly impact the disease prognosis. Over 90% of urologists cited no formal smoking cessation training and 40% stated they did not feel qualified to give such counseling (8). Other barriers included insufficient time and reimbursement as preventive barriers (8). Often, urologists believe that cessation counseling is outside the scope of a specialist and would be best done by the patient's primary care physician. However, one study showed that recent ex-smokers cited twice as

often that it was, in fact, the advice of their urologist that led them to quit smoking, as opposed to the advice of their primary care physician (PCP) (9). Additionally, smokers with a new diagnosis of bladder cancer are at least five times more likely to quit smoking than the general population (48% *vs.* 10%, respectively; P<0.001) (10). It has been acknowledged that cessation rates are optimized when physicians harness the opportunity of a new tobacco-related diagnosis and emphasize disease association with tobacco use (6). As noted, meaningful improvements in cessation discussions are predominantly reliant on addressing several hurdles on the physician side. The studies referenced highlight many important areas in which urologists have room for growth in this regard, many of which can be addressed through education, utilizing statistics that reveal patient views. Though it may be unrealistic to address every one of these reported barriers, a practical effort can be made to at least address some of them in an effort to increase urologist-led cessation attempts and improve patient outcomes.

Current guidelines recommend using the ask, assist, refer (AAR) approach, which places the onus on the clinician to approach the topic of tobacco use, who then provides evidence-based advice, pharmacotherapy, and referral services. Once the patient makes an intentional decision to quit, the most efficacious assistive treatments include a combination of cognitive behavioral therapy and first-line prescription medications, such as varenicline or bupropion (11,12). Interestingly, brief conversations on cessation appear to be more efficacious than intensive conversations (13). As outlined by the American Urological Association/Society of Urodynamics, Female Pelvic Medicine and Urogenital Reconstruction (AUA/SFU) guidelines on hematuria, patients presenting for asymptomatic hematuria should have a careful history and physical taken to assess for risk factors for genitourinary malignancy, medical renal disease, gynecologic and non-malignant causes of microscopic hematuria. In patients with urinary tract infection, a repeat urinalysis (UA) should be obtained to confirm resolution of hematuria. Patients can be divided into low, medium and high risk and undergo evaluation by repeat urinalysis, renal ultrasound, cystoscopy and/or computed tomography urogram (CTU). Repeat UA is recommended after 12 months and treatment should be performed as indicated. Urine cytology markers are recommended for patients who have an initial negative workup and have persistent microhematuria or irritative voiding symptoms (14).

One contemporary trend to be cognizant of is the rise of e-cigarette use in adults. Though e-cigarettes have been associated with numerous pulmonary diseases, their role in the context of bladder cancer and hematuria has yet to be elucidated. Regarding smoking cessation, 2018 Centers for Disease Control and Prevention (CDC) data shows that 25.2% of adults who quit smoking cigarettes within the past year simply began using e-cigarettes instead, suggesting that any conversation regarding smoking cessation should certainly include e-cigarette use (15). However, further study is needed to fully assess the impact of e-cigarettes on genitourinary (GU) malignancies.

The results of our study suggest that urologists, in the context of new urologic diagnoses, have a key opportunity to successfully provide smoking cessation counseling. While formal counseling did have a marginal improvement in quit rates compared to no counseling, these results were not significant. Other studies have looked at quit rates in patients given a new diagnosis of bladder cancer and have shown differing results on the impact of formal counseling. Winters *et al.* investigated the relationship between a new diagnosis of bladder cancer and self-reported smoking cessation rates in patients participating in Medicare Advantage Organizations. In this study of 394 patients, they demonstrated there was no statistically significant difference in smoking cessation rates between newly diagnosed bladder cancer patients and non-cancer controls (16). Bassett *et al.* report that nearly half of their patients with bladder cancer successfully reported smoking cessation. The patients that quit cited their cancer diagnoses as the primary motivating factor, followed next by the advice of their urologist (17). These findings suggest that urologists do have a significant impact in helping patients quit. Matulewicz *et al.* report a prospective study documenting patients' tobacco use at the time of consultation and included willingness to quit, chosen quit strategy and subsequent engagement in quit attempts. Of all screened patients, 38% were willing to quit. Among those, 39% and 49% made a formal quit attempt by 3 and 6 months, respectively (18). According to Jha *et al.*, cessation before the age of 40 years (13.4% in our patient sample) can reduce smoking-associated risk of death by 90% (19).

Conclusions

Smoking cessation is a multifactorial endeavor, with patients presenting at varying degrees of readiness and willingness to quit. Hematuria and clinician-led smoking cessation intervention programs present urologists with

a key opportunity to emphasize the impact of lifestyle modification on GU malignancy management. While the urologic community is still assessing the effectiveness and benefit of providing smoking cessation counseling broadly, it would appear that patients do indeed respond to the advice of their urologists, and that a new diagnosis serves as an appropriate entry point to initiate cessation discussions. Additionally, the current literature strongly supports the benefits of urologist-led smoking cessation interventions, as well as the direct impacts they can have on mortality. In an effort to encourage more comprehensive reform, further research should be emphasized on better understanding the barriers that prevent cessation discussions and evaluating potential solutions.

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Footnote

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Conflicts of Interest: All authors have completed the ICMJE uniform disclosure form (available at https://tau.amegroups.com/article/view/10.21037/tau-23-592/coif). The authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. The study was conducted in accordance with the Declaration of Helsinki (as revised in 2013). The study was approved by the Institutional Review Board of the University of Louisville (No. 19.1230) and informed consent from patients was not required due to the retrospective nature of the study.

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