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Periprocedural Antibiotic Prophylaxis Practice during Diagnostic Cystoscopy: An Observational Study

Anjit Phuyal, Suman Chapagain, Pawan Raj Chalise, Bhojraj Luitel, Sujeet Poudyal, Prem Raj Gyawali

Author(s) affiliation

Department of Urology and Kidney Transplant Surgery, Maharajgunj Medical Campus, Tribhuvan University Teaching Hospital, Institute of Medicine, Kathmandu, Nepal

Corresponding author

Suman Chapagain, MS, MCh
drsumanchapagain@gmail.com

ABSTRACT

Introduction

Both American and European guidelines recommend against routine use of antibiotics prophylaxis in routine cystoscopy. But studies have shown that antibiotics use during cystoscopy is discordant from available guideline recommendations even in Europe and America. This study aims to identify prophylactic antibiotic uses pattern of Nepalese Urologists and measure adherence to guidelines.

Methods

An online questionnaire based self-reported survey was conducted among the practicing urologists of Nepal, who were full members of Nepalese Association of Urologists. The questionnaires in Google Forms were sent via emails to 96 urologists of Nepal. Fully completed questionnaires were analyzed.

Results

Out of 96 emails 58 fully filled questionnaires were received and analyzed. Routine prophylactic antibiotics prescription before cystoscopy was reported by 43 (74.1%) urologists. Availability of Antibiotic Stewardship/Antimicrobial Stewardship team at their workplace was reported by 31 (53.4%) urologists and 19 (32.8%) urologists reported of having Standard Operating Procedure regarding peri-procedural antibiotic prophylaxis at their workplace. No verification of the answers were done and reported as received.

Conclusion

Peri-procedural antibiotic prophylaxis practice during cystoscopy was highly prevalent.

Keywords

Antibiotic; cystoscopy; prophylaxis

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INTRODUCTION

One of the major public health problems of antibiotic resistance is due to indiscriminate use of antibiotics.[1] Antibiotics are commonly used as prophylaxis before surgery. Antibiotic prophylaxis is defined as a short course of antibiotic in the peri-procedural period to minimize the infections that might result from the procedure.[2] Perioperative care is one of major clinical setting affected by antibiotic resistance.[3] Hence, judicious use of antibiotic prophylaxis to achieve a balance of infection control and prevention of antibiotic resistance is important.

One of the commonly performed urological procedure worldwide is cystoscopy.[4] Cystoscopy is a minimally invasive procedure and despite that the risk of urinary tract infection is 3 to 10%. Best practice statement from American Urological Association states that simple cystoscopy in healthy adults who do not have infections or symptoms and signs of infection do not need antibiotic prophylaxis.[5] Similarly, European Association of Urology guideline has strong recommendation against routine use of prophylactic antibiotics during cystoscopy.[6] Despite these recommendations day to day practice of urologists differs.

We could not find any study assessing the prophylactic antibiotic prescription pattern among urologists from Nepal. This study aims to identify prophylactic antibiotic uses pattern of urologists in Nepalese settings and measure adherence to guidelines.

METHODS

A survey with self-reported online questionnaire was conducted among practicing urologists of Nepal, who were the full members of Nepalese Association of Urology (NAUS) and currently performing cystoscopies in their clinical practice. This survey was conducted on July 2024. The questionnaire was available from 1st to 21st of July 2024. Among the 130 full members at the time of this study, the questionnaire was sent in email to 96 urologists in the form of Google Forms. Rest of the 34 urologists couldn't be contacted. Only complete questionnaires were subjected to further analysis.

All data were entered in Microsoft Excel version 2016, and converted into IBM SPSS version 26, for statistical analysis. The data were presented in percentage, mean, and standard deviation and summarized using graphical methods of presentation of data (bar diagram). Ethical clearance and approval of protocol was obtained from the Institutional Review Committee of Institute of Medicine.

Table 1. Socio-demographic characteristics of responders

Characteristics	Number
Questionnaire emailed	
Total	96
Response	58
No Response	38
Gender	
Male	56
Female	2
Number of years of Practice	
< 5 years	13
5-10 years	17
>10 years	28
Location	
Kathmandu valley	38
Chitwan	7
Biratnagar	3
Pokhara	3
Dhangadi	3
Nepalgunj	2
Jhapa	1
Dhulikhel	1

RESULTS

Out of 96 emails total of 58 fully answered the questionnaire were received back.

Only two of the participants were female urologists. The mean age of the participant urologists was 39.97±8.18 years. Urologists in this study represented 10 different cities of Nepal and maximum numbers were from Kathmandu. All the participants were routinely doing diagnostic cystoscopies with an average of 15 cystoscopies per week. Urine microscopic examination was sent by 41 (70.7%) urologists and 20 (34.5%) also sent urine culture routinely before cystoscopy.

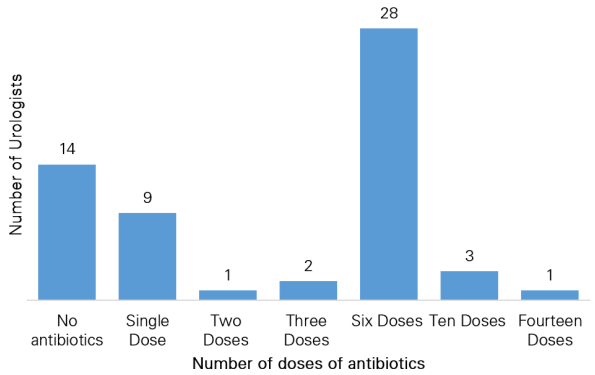

Figure 1. Number of doses of antibiotic prophylaxis in cystoscopy

Among 58 urologists, 43 (74.1%) of them routinely prescribed prophylactic antibiotics before cystoscopy. Among those who prescribed prophylaxis; five (8.3%) prescribed antibiotics for six doses (Figure 1). There was no relation between number of years of practice and antibiotics prescription. Among 43 urologist who prescribed regular antibiotics eight were practicing for less than five years, 12 were practicing for five to ten years and 23 for more than ten years.

In presence of asymptomatic bacteriuria 17 (29.3%) urologists would proceed with cystoscopy with prophylactic antibiotics while 41 (70.7%) would treat asymptomatic bacteriuria and perform cystoscopy later. Only 17 (29.3%) of urologists have encountered symptomatic urinary tract infections (UTI) after cystoscopy with an average of 1.67 UTIs annually. About 53.4% of urologists in the survey reported of having Antibiotic Stewardship/Antimicrobial Stewardship (ASB) team at their workplace but only eight (13.8%) were part of the ASB team. Regarding Standard Operating Procedure (SOP) for peri-procedural antibiotic prophylaxis at workplace, 19 (32.8%) urologists reported as having SOP as part of their management protocol.

DISCUSSION

This was a national survey conducted in view of knowing the peri-procedural antibiotic prophylaxis prescription pattern of Nepalese urologists during diagnostic cystoscopy. Multiple urology guidelines are against the routine antibiotics prophylaxis during diagnostic cystoscopy. Routine antibiotic prophylaxis should be balanced between prevention of urinary tract infections and possible antibiotic resistance and cost associated with antibiotics.

Most responder urologists routinely prescribed antibiotics before cystoscopy. This is against the current European and American guidelines. Various studies have shown more than 50% urologists do not adhere to the antibiotic prophylaxis guidelines.[7–9] Among those who prescribed prophylactic antibiotics the number of doses ranged from single dose to multiple doses. American and European guidelines recommend antibiotics prophylaxis to be limited to 24 hours of procedure for most of the urological procedures.[5-6] Both the antibiotic prophylaxis prescription practice and duration of prophylaxis needs to be reviewed and measures should be taken to improve adherence to guidelines.

Majority of the respondents routinely sent urine microscopic examination prior to cystoscopy and only one third of respondents sent routine urine cultures. Studies have shown that clinically significant UTI was seen in approximately 1.9% of patients undergoing cystoscopy and only 5% of patients with positive urine culture. Routine urine cultures before cystoscopy could be an over investigation.[1]

Improper use of antibiotics which is also an important factor responsible for widespread antimicrobial resistance might be due to lack of antibiotic stewardship programs and standard operating procedures for antibiotic prophylaxis. In our study almost half of the urologists practice in places which do not have antibiotic stewardship programs. Even when such programs are available very few urologists are part of the program. Only one third of the urologists have standard operating procedures for perioperative antibiotic prophylaxis. Antibiotic stewardship program and standard operating procedures can play an important role in improving proper use of antibiotics among urologists.[10]

Limitations of the study includes

- This was a self-reported questionnaire, so actual practice to the urologists may not be reflected
- More than half the urologists have not been included in the study
- Non-validated questionnaire survey was used
- No verification of the information was done
- Type of antibiotic used was not included in the study

A multi-institutional observational study to observe the actual antibiotic prescription practice of the urologist during various urological procedures. Further researches into use and misuse of antibiotics will help in fighting against antibiotic resistance.

CONCLUSION

This study showed that regular multi-dose and post-discharge prophylaxis for cystoscopy is still being practiced and is discordant to the available antibiotic prophylaxis guidelines. Only half of the centers where urologists work reported to have antibiotic stewardship program. There is very low participation of urologists in antibiotic stewardship program team.

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CONFLICT OF INTEREST

The author(s) declare that they do not have any conflicts of interest with respect to the research, authorship, and/or publication of this article.

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