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Betadine Suppository: is it Enough to Prevent Infections Following Transrectal Prostate Biopsy?

Medical Science

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ABSTRACT

Transrectal prostate biopsy is a commonly performed procedure. Although safe, infectious complications do complicate this procedure in spite of the best efforts by the urologists. This study was conducted to find out the efficacy of Betadine suppository in combating the post biopsy infectious complications.

A total of 127 patients who underwent transrectal ultrasound guided prostate biopsy were randomly divided into two groups. Group A received prophylactic Intravenous antibiotics while patients in Group 2 were administered Betadine suppository 30 minutes prior to the biopsy. Infectious complications developed in a total of 5 patients (1 in group 1 and 4 in group 2) but the difference did not reach statistical significance. The non infectious complications were also comparable between the two groups

Use of Betadine suppository is a cheaper and safer alternative with less chances of drug resistance when used as a standalone prophylaxis for transrectal biopsies.

INTRODUCTION

Transrectal ultrasound (TRUS) guided biopsy of the prostate is a commonly performed procedure for histological diagnosis of prostate cancer. It is a safe and short procedure but complications do occur at times, with infection being the commonest. As per existing guidelines, urologists use prophylactic antibiotics to minimize the infective complications after such a biopsy [1, 2]. But, there is a dichotomy between the use of single dose pre-procedure antibiotic versus starting oral antibiotic three days prior to the biopsy and continuing it for few days post biopsy. Inspite of this antibiotic therapy the risk of infection is not completely eliminated [1]. Additionally, other avenues to reduce the rate of post biopsy infection have been studied which includes, and is not restricted to, the use of cleansing enema before the procedure and the use of povidone iodine locally before biopsy [3, 4, 5]. The use of local povidone iodine seems to be an appealing method but there are limited studies available on the subject. We conducted this study to analyse the effect of povidone-iodine pessary on the rate of infectious complications after TRUS guided biopsy of the prostate.

MATERIAL AND METHODS

The present prospective randomized control trial was conducted between January 2015 and June 2016. Thus study aimed to evaluate the efficacy of Povidone iodine pessaries in eliminating the risk of post biopsy infections. A total of 127 patients underwent TRUS guided prostatic biopsy for either raised PSA (>4ng/ml) and/or abnormal finding (hard nodule) on digital rectal examination (DRE) and/ or any suspicious nodule seen on ultrasound of the prostate. Patients were excluded from the study if they had: known hypersensitivity to povidine iodine, uncorrected bleeding diathesis or had documented Urinary tract infections. They also did not form part of the study group if they were on anticoagulants or on antibiotics for any other cause.

All patients entering the study were randomized into two groups, Group1 and Group 2 on the basis of computer generated random numbers. Patients in Group 1 were given a single dose of Inj Cefoperazone sodium (Inj Magnamycin; Pfizer) 1 gm intravenously 30 min prior to the procedure while those in Group 2 were given pre procedure Betadine pessary (containing Povidone Iodine 200mg; Win Medicare) 30 minutes before the procedure by the nursing staff. All patients in the study received a sodium phosphate enema in the morning of the procedure irrespective of the group they were randomised to. A 12 core prostate biopsy was done following the standard procedure with the patient in left lateral position. Post biopsy an anal pack was placed and patients were shifted to recovery room where after half an hour the anal pack was removed and the patients were allowed to go home and were told to watch for any hematuria, bleeding per rectum, fever, burning micturition or perianal pain. They were followed up for a period of one month following the biopsy by telephonic interview on days one, three, seven, fifteen and thirty besides the physical review with the Histopathology report and in case they reported to the hospital with any complications. Post biopsy urine and blood cultures were done only in patients who developed infectious complications.

Statistical Analysis

Comparison between groups was performed by the independent sample t test and chi square tests. Statistical significance in the study was set at P value of 0.05. The statistical analysis was performed by using SPSS version 16.

RESULTS

Patients in both the groups were comparable in terms of age and PSA values as (Table 1). Infectious complications developed in total of 5 cases (3.9%) with 1 in Group 1(0.8%) and 4 cases (3.1%) in Group 2 (p value: 0.312). Among the four patients in group 2, one had fever with sepsis (positive urine culture, raised total leukocyte count-23,500/cmm, pulse- 110/min and respiratory rate of 24/min) and the others had fever without any features of sepsis. Patient with sepsis required hospitalization with intravenous antibiotics for a complete recovery. All these five patients had dysuria and frequency which resolved spontaneously on treatment of UTI.

Noninfectious complications, seen in our patients, were hematuria in 73 cases (57.5%), rectal bleeding in 7 cases (5.5%), and perineal pain in 25 cases (19.7%). Hematuria was observed in 60% and 55% of the patients in Group 1 and in Group 2, respectively. All cases with hematuria were mild except in 5 patients where it lasted for more than a week with clots noted by 2 patients. These patients were managed conservatively on OPD basis and hematuria resolved spontaneously. The incidence of rectal bleeding (6% in Group 1 and 4.5% in Group 2) was similar between the two groups with no statistical difference. No blood transfusion was required. A total of 25 patients (19.7%) complained of perineal pain on day one of biopsy. This

resolved without any medication on subsequent follow up. By the end of 30 days of follow up all patients were asymptomatic.

DISCUSSION

TRUS guided prostate biopsy is a routinely performed OPD procedure in most Urology clinics. Although it is a safe procedure few patients do develop post biopsy complications. Bleeding is the commonest complication seen in patients with hematuria reported in up to 63% of cases and rectal bleed in up to 21.7 % patients [6,7]. In our series hematuria was seen in 57.5% of patients while rectal bleed was seen in 5.5 % of patients. None of them required any intervention and the bleeding settled spontaneously. Most infectious complications after TRUS biopsy are limited to symptomatic urinary tract infection and low-grade febrile illness, which can be readily treated with oral or intravenous antibiotics. Rare case reports of fatal septicemia after prostate biopsy have been published (8, 9, 10). Historical series prior to the routine use of antibiotic prophylaxis found bacteriuria in 32% to 36% of patients and bacteremia/febrile illness in 48% to 69% of patients undergoing TRUS biopsy (11). However, with the routine use of antibiotics, recent studies show that only 2% of patients go on to develop a febrile urinary tract infection, bacteremia, or acute prostatitis requiring hospitalization for intravenous antibiotics (12,13). In our series 3.9 % of patients had febrile illness with only 0.8% in the antibiotic arm and 3.1% in the betadine pessary arm, although the difference between the two groups did not reach statistical significance.

Gafoori et al conducted a study where they used Betadine enema vs lidocaine gel prior to TRUS guided biopsy and found a significantly reduced rates of infection in the betadine enema group (14). Park et al added Gynobetadine to the IV antibiotics prior to TRUS biopsy and found a significantly reduced rate of infectious complications in the antibiotic + Gynobetadine arm (15). Our study reports a similar result wherein the rate of infectious complications was not statistically more than that in the antibiotic group. We could not find any article which compared the use of Betadine pessary to that of prophylactic antibiotic to evaluate the rate of post biopsy infectious complications. Our study shows that, only Betadine pessary is good enough to prevent infections. This would translate to a minimal use of antibiotic which in turn would translate into a lesser degree of antibiotic resistance.

CONCLUSIONS

Use of Betadine suppository is effective in reducing the infectious complication of TRUS guided prostate biopsy. Its use for prophylaxis prior to TRUS biopsy in place of antibiotic is safe and may also help in reducing the antibiotic resistance which plagues the indiscriminate use of antibiotics. However, a larger randomised control trial would be required to ascertain whether Betadine pessary, a simpler and a cheaper modality of prophylaxis, can replace the proven antibiotic prophylaxis prior to prostate biopsy.

TABLE

	Group 1 Mean± SD	Group 2 Mean± SD	P Value
Number of patients	66	61	
Age (years)	69.7 ±8.719	69.2 ±8.405	0.762
PSA	25± 47.24	44±126.53	0.253
Infectious complications	N (%)	N (%)	
Fever	1(0.8%)	4(3.1%)	0.312
Septic Shock	Nil	Nil	-
Prostatitis	Nil	Nil	-
Positive Urine Culture	Nil	Nil	-
Non- Infectious complications	N (%)	N (%)	
Hematuria	40(60.6%)	33(54.9%)	0.374
Rectal Bleed	4(6.06%)	3(4.5%)	0.778
Perineal Pain	7(12%)	15(27.2%)	0.083
LUTS	Nil	Nil	-

Table 1: The distribution of patients and complications between the two study groups.

REFERENCES

1. Aus G, Hermansson CG, Hugosson J, Pedersen KV. Transrectal ultrasound examination of the prostate: complications and acceptance by patients. Br J Urol 1993; 71; 457-9.
2. Zani EL, Clark OA, Rodrigues Netto. Antibiotic prophylaxis for transrectal prostate biopsy. Cochrane Database Syst Rev. 2011;(5):CD006576.
3. Aus G, Ahlgren G, Bergdahl S, Hugosson J. Infection after transrectal core biopsies of the prostate-risk factors and antibiotic prophylaxis. Br J Urol 1996; 77: 851-5.
4. Collins GN, Lloyd SN, Hehir M, McKelvie GB. Multiple transrectal ultrasoundguided prostatic biopsies: The true morbidity and patient acceptance. Br J Urol 1993; 71: 460-3.
5. Khan SA, Hu N, Smith N. Intraoperative preparation of rectum with povidone-iodine-saturated gauze in transrectal biopsy of prostate. Urology 1984; 23 (5): 104-105.
6. Djavan B, Zlotta A, et al.: Optimal predictors of prostate cancer on repeat prostate biopsy: a prospective study of 1,051 men. J Urol. 2000;163 (4):1144-1148.
7. Enlund AL, Varenhorst E: Morbidity of ultrasound-guided transrectal core biopsy of the prostate without prophylactic antibiotic therapy. A prospective study in 415 cases. Br J Urol. 1997;79 (5):777-780.
8. Breslin JA, Turner BI, et al.: Anaerobic infection as a consequence of transrectal prostatic biopsy. J Urol. 1978; 120(4): 502-503.
9. Brewster SF, Rooney N, et al.: Fatal anaerobic infection following transrectal biopsy of a rare prostatic tumour. Br J Urol. 1993; 72(6): 977-978.
10. da Silva E, Pereiro Alvarez B, et al. Peritonitis following transrectal biopsy of the prostate. Arch Esp Urol. 1999; 52(2): 167-168.
11. Crawford ED, Haynes AL Jr, et al. Prevention of urinary tract infection and sepsis following transrectal prostatic biopsy. J Urol. 1982; 127 (3):449-451.
12. Kapoor DA, Klimberg IW, et al.: Single-dose oral ciprofloxacin versus placebo for prophylaxis during transrectal prostate biopsy. Urology. 1998; 52 (4):552-558.
13. Lindert KA, Kabalin JN, et al.: Bacteremia and bacteriuria after transrectal ultrasound guided prostate biopsy. J Urol. 2000; 164 (1):76-80.
14. Ghafoori M, Shakiba M, Seifmanesh H, Hoseini K. Decrease in Infection Rate Following Use of Povidone-Iodine During Transrectal Ultrasound Guided Biopsy of the Prostate: A Double Blind Randomized Clinical Trial. Iranian Journal of Radiology. 2012;9 (2): 67-70.
15. Dong SP, Jong JO, Jin HL, Woong KJ et al. Simple Use of the Suppository Type Povidone-Iodine Can Prevent Infectious Complications in Transrectal Ultrasound-Guided Prostate Biopsy. Advances in Urology. 2009, Article ID 750598, doi:10.1155/2009/750598.