



**THE UNIVERSITY OF ZAMBIA
SCHOOL OF MEDICINE**

**PRE-OPERATIVE BLADDER IRRIGATION WITH POVIDONE IODINE IN
REDUCING OPEN PROSTATECTOMY SURGICAL SITE INFECTION (SSI) AT
UNIVERSITY TEACHING HOSPITAL, LUSAKA.**

BY

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**A dissertation submitted to the University of Zambia in partial fulfilment of the
requirements for the degree of Master of Medicine in Urology.**

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DECLARATION

I hereby declare that this dissertation presented herein for the degree of Masters of Medicine (Urology) was carried out by the candidate in the Department of Surgery, University teaching Hospital, University of Zambia. It has only been submitted to the University of Zambia for a higher degree.

Signature of Candidate

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Signature of Supervisor

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Signature of Co-supervisor.....

CERTIFICATE OF APPROVAL

This dissertation entitled PRE-OPERATIVE BLADDER IRRIGATION WITH POVIDONE IODINE IN REDUCING OPEN PROSTATECTOMY SURGICAL SITE INFECTION (SSI) AT UNIVERSITY TEACHING HOSPITAL, LUSAKA by Dr. SIMON MUKOSAI has been approved by the board of examiners as fulfilling part of the requirements for the award of the degree of Master of Medicine in Urology by the University of Zambia.

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ABSTRACT

Objective

The study investigated the efficacy of using 1% povidone-iodine pre-operative bladder irrigation in reducing open prostatectomy surgical site infections at the University Teaching Hospital, Department of Surgery, Lusaka.

Patients and Methods

One hundred and thirty patients were recruited from the waiting list of Urology unit II in the department of surgery during the period between July 2011 to December 2012. The patients were randomly allocated to each of the two groups using a non-probability convenient sampling method. Each group had 65 patients. Patients in the study group had their bladder irrigated with 1% 50cc povidone-iodine which was drained upon opening the bladder and open prostatectomy performed as per standard technique. In the control group povidone-iodine was not used. Both groups received pre-operative antibiotics 30 minutes before incision and post-operative for 5 days. Pre-operative, intraoperative and post-operative data were collected on a standardised data collection forms.

Post-operative irrigation was done for 24 to 48 hours. After 9 to 12 days the catheter was removed as an out patient. Patients were followed up in the urological clinic at 1 week, 2 weeks and at 4 weeks post-operatively to assess whether they had developed surgical site infections according to CDC guidelines. Data were analysed using SPSS version 16.

Results

The patients mean age was 71.1 in the control group and 71.4 in the study group with no statistically significant difference ($t=0.318$; $p=0.75$; $df=126.89$).

The overall surgical infection rate was 16.2%. In the control group 15 out of 65 patients (23.1%) developed SSIs. While in the study group 6 out of 65 patients (9.2%) developed SSIs. The difference in the rates of SSI between the two groups was statistically significant (χ^2 ; $p<0.05$; $df=126.89$) *Escherichia coli* was the most predominant organism 13/37 (35%), *Streptococcus* 7/37 (18.9%), *Citrobacter koseri* 5/37 (13.5%), *Klebsiella sp* 4/37 (10.8%). *Escherichia coli*, *Streptococcus* and *Citrobacter* were sensitive to ciprofloxacin; *Pantoea agglomerans* was sensitive to ceftazidime, while *Staphylococcus coagulase* was sensitive to imipenem. *Enterobacter cloace* was resistant to all antibiotics used.

Conclusion

Irrigating the bladder with 1% povidone-iodine resulted in a significant lower rate of surgical site infections, reduced morbidity and post-operative hospital stay.

DEDICATION

To my wife Winnie Makai Mukosai, and our children Chilombo, Muzang'alu and baby Luwi for having endured this long process with me always offering support and love.

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LIST OF SYMBOLS

1. £ : Pound sign
2. p : Power
3. < : less than
4. % : Percentage
5. χ^2 : Chisquare
6. g: Gram

LIST OF ABBREVIATIONS

1. BPH: Benign Prostatic Hypertrophy
2. CDC: Centre for Disease Control
3. df: Degree of Freedom
4. HAI: Healthcare Acquired Infections
5. HIV: Human Immunodeficiency Virus
6. IPSS: International Prostate Symptom Score
7. LUTS: Lower Urinary Tract Symptoms
8. NNIS: National Nosocomial Infection Surveillance
9. RCT: Randomised Control Trial
10. SADC: Southern Africa Development Conference
11. SD: Standard Deviation
12. SPSS: Statistical Package for Social Sciences
13. SSI: Surgical Site Infection
14. USA: United States of America
15. UTH: University Teaching Hospital
16. WHO: World Health Organisation