Risk Assessment of Cathter Associated Urinary Tract Infection among Catheterised Patients at Selecteed Hospital at Mangaluru

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Abstract

Objectives: The objectives of the study is to assess the relation between the risk scores and the demographic variables and to assess the risk of occurrence of catheter associated urinary tract infection among catheterized patients.

Method: A descriptive study was conducted among 100 catheterized patients from selected hospitals at Mangaluru from October 2018 to January 2019. Probably simple random techniques was used in the study to select the sample. A standardized risk assessment tool was used to find out the risk rate of the patient.

Result: The result showed that 74%% of the patients is at medium risk for getting CAUTI. The study shows that there is an association between the risk score and demographic variable such as size of the catheter used and there is no significant association between the other demographic variables and the risk scores.

Conclusion: There is a medium risk for the catheterized patients for getting catheter associated urinary tract infection.

Keywords: *Catheterization, catheter associated urinary.*

Introduction

Urinary Catheterization, a sterile procedure including the introduction of a tube into the urinary bladder through urethra to drain the bladder[1]. Urinary tract infections are the most common nosocomial infection accounting for up to 40% of infections reported by acute care hospitals[2]. Up to 70%-80%urinary tract infection are associated with the presence of an indwelling catheter. Recent studies shown that a urinary catheter is the most common indwelling device, about 17.5% of patients in 66 European hospitals and 23, 6% in US hospitals[3]. About 5 million urinary catheters are put annually in US. Between 12% to 25% of the patients will receive urinary catheters on their hospital stay, in this half are placed without indication[4]. About 40% of the physicians are unaware that their patients are having urinary catheter[5]. Urinary tract infections account for approximately 40% of all hospital. Acquired infections annually and also accounting for about 23% of hospital acquired infection among adults ICU patients in US in the general care ward it usually tend to increase ranging from 4.7 infections per 1000 catheter days in adults step downs units to 16.8 infections in rehabilitation units[4]

Urinary tract infections are most common health care associated infections. The main cause is indwelling catheters, catheter care, host susceptibility, drainage system connected are main contributing factors for occurrence of urinary tract infections . This could be a major issue to be taken care by all health care professionals to prevent and control the infections up to the extent while caring the patients with indwelling catheters. If the urinary bladder empties completely while voiding there will be no chance for bacterial growth in the urinary tract[6.] Areas of catheterization also play a major role in contributing to urinary tract infections. This means catheterization done other than operation theatre

shows a high incidence rate of CAUTI. Daily catheter care is an important factor that can minimize the risk of infection in the patient with indwelling catheters. Aseptic technique can follow while caring with patients and after catheterization position of the catheter (thoroughly fixed to patient's thighs), drainage bag (below the bladder level) is properly monitored. Personal hygiene is very necessary and important, especially regular personal hygiene is mandatory when the patient is on indwelling catheter. Patients should be taught and aware of the importance of personal hygiene[7].

Materials and Method

The study was conducted at a selected hospital of Mangaluru and the hospital were selected based on the feasibility of conducting the study and the availability of the samples. The probability simple random technique was used for selection of the sample. The study samples were consisting of 100 catheterized patients. The a standardized risk assessment tool was used to assess the risk of CAUTI.

Finding:

Section 1: Assess the risk of occurrence of catheter associated urinary tract infection.

Table: Frequency and percentage distribution of subject according to risk rate.

Level of Risk	Frequency	Percentage
High	18	18%
Medium	74	74%
Low	8	8%

Table table 1: shows that maximum(74%) have medium risk, 18% have high risk and 8% have low risk.

Section 2: association of the risk scores and the selected demographic variables.

In order to find out association between risk scores and selected demographical variable, the following null hypothesis was stated

H_1: There will be a significant association between risk scores of catheterized patients with their selected demographic variables

Table 2: Association between risk scores and selected demographic variables. n=100

SI. No.	Variables	Rating			df	Chisqure	Inference
		High Risk	Medium Risk	Low Risk			
1.	Age				6	0.90	NS
	30-40	1	15	2			
	41-50	7	29	1			
	51-60	8	25	2			
	61-70	2	5	3			
2.	Gender				2	0.571	NS
	Male	9	47	5			
	Female	9	27	3			
3.	Education				8	0.91	NS
	No formal education	4	5	3			
	Primary	4	28	2			
	Secondary	5	14	3			
	Pre university	2	14	0			
	Graduation and above	3	13	0			
5.	Period ofCathterizaton				6	0.89	NS
	<5	10	33	0			
	6-10	3	7	2			
	11-15	3	20	2			
	>16	2	14	4			

SI. No.	Variables	Rating			df	Chisqure	Inference
		High Risk	Medium Risk	Low Risk			
6.	History ofSurgery				2	0.252	NS
	Yes	9	47	3			
	No	9	27	5			
7.	Other disease				2	0.996	NS
	Yes	11	45	5			
	No	7	29	3			
8.	CatheterizationPerformed by				2	0.048	NS
	Docter	15	63	4			
	Staff nurse	3	11	4			
9.	AntibioticTherapy				2	0.309	NS
	Yes	11	57	5			
	No	7	17	3			
10.	Size of theCatheter				6	0,002	S
	14fr	16	62	3			
	16fr	1	7	1			
	18fr	1	4	2			
	20fr	0	1	2			
11,	Placement of Uro bag				6	0.382	NS
	Above the bed above the level of the bladder	4	10	2			
	Below the bed below the level of the bladder	3	3	1			
	Above the bedabove the level of the bladder	7	44	3			
	Below the bedBelow the levelOf the bladder	4	17	2			

NS = Not significant; S = Significant.

The table ton shows that there is a significant association between the risk score and the demographic variables such as size of the catheter and there is no association between the other demographic variables. For the null hypothesis is rejected and the research hypothesis is accepted.

Conclusion

The study result shows that there is a medium risk for the catheterized patients to get CAUTI and there is a significant association between the risk score and the demographic variables such as size of the catheter and there is no significant association between risk scores and other demographic variables.

Ethical Clearance: Yenepoya ethics committee-1 approved our study protocol number 2018/061 titled "Risk assessment of catheter associated urinary tract infection among catheterized patients in a selected hospital at Mangaluru '' on 17/09/2018 under the chairmanship of Dr. Uma Kulkarni.

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Conflicts of Interest: Nil

Reference

1. Sr. Nancy principles and practice of nursing senior. Nursing procedure.6^ Thedition. Jawa compacted M.V Hospital road, NR publishing house, 2007.
2. Edward JR, Peterson KP, Andrus ML,al. National Health safety Network (NHSN) report data summary for 2006,issued June 2007. Am infect control. 2007,35;290-61

3. Magill .SS, Edward JR, Bamberg W, Beldaus ZG, Damyathig, Kainer MA, Lynfied R, Maloney A,MC Allister-hollod L, NadleJ,Ray BM, Thompson D,WilsonLE,Fridkin SK :Multistate point .prevalence survey of health care associated infectionsEnd/J med 2014,370:1198-1208
4. GoolsarramVJ,Katz.TF:Do not go with flow remember indwelling catheters JAM Geriater SOC 50:1739-1740,2002.
5. Saint S, Wiese J,Amroy JK, Bernstein ML, PatelUD, Zemenculk JK, et al:Are physicians aware of which of their patients have indwelling urinary catheters. AM J Med 109,476-480,2000
6. Gould CD, UmscheidCA,Agarwal RK, Kuntz Q, Pegues DA,(2010).Guidelines for prevention of catheter associated urinary tract infection, available from: http://www.cdc.gov/nicpac/cauti/003
7. Linda Greene, James Marx, Shannon Oriola,. A guide to eliminate catheter associated urinary tract infection.[internet] 2008.[cited 2015 July] Available from http://www.apic.org/Resource_/EliminationGuideForm/c0790db8-2aca-4179-a7ae-676c27592de2/File/APIC-CAUTI-Guide.pdf.