

Original article:

Study of incidence of urinary tract infection in patients catheterized in surgical ward and emergency ward

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Abstract:

Introduction: It is generally not recommended to treat asymptomatic catheter associated bacteriurea.¹ However it has been shown to be an important cause of hospital acquired urinary tract infections specially in post operative patients

Materials and Method: All patients admitted to the surgery ward with sample size 120 patients were included. 120 consecutive patients of either sex, admitted to the surgical ward either directly or via emergency with foleys catheter, were included in this study. A baseline urinary culture was obtained for all included patients in order to exclude those with preexisting urinary tract infection. These patients were followed up 48 hours after catheter was removed in order to diagnose a catheter induced urinary tract infection.

Results: In the present study, in 52.50% (63/120) patients urinary catheterization was performed in the surgical ward while in the remaining 47.5% (57/120) patients urinary catheterization was performed in the emergency ward.

In our study, the most common indications for catheterization in the emergency ward are listed here: 80.70% (46/57) were burns patients, 8.77% (5/57) were catheterized for titration of urine output, 3.51% (2/57) patients each were unconscious or had chronic urinary retention, and 1.75% (1/57) patient had an acute abdomen or acute urinary retention. Among the 63 patients in the surgical ward, 42.86% (27/63) were in the preoperative state, 49.21% (31/63) were in the post-operative state, while 7.94% (5/63) patients were bed ridden.

Conclusion: In our study, the most common indications for catheterization in the emergency ward are listed here: 80.70% were burns patients, 8.77% were catheterized for titration of urine output, 3.51% patients each were unconscious or had chronic urinary retention, and 1.75% patient had an acute abdomen or acute urinary retention.

Introduction:

It is generally not recommended to treat asymptomatic catheter associated bacteriurea.¹ However it has been shown to be an important cause of hospital acquired urinary tract infections specially in post operative patients.² Bacterial colonization on Foley's catheter can precede the emergence of bacteriurea and has a significantly higher rate of culture positive as compared to urine culture.³ This is specially true in the initial two to three days of catheterization. Hence, it is important to consider this parameter instead of urine culture in order to obtain a more precise picture of asymptomatic infections of urinary tract in catheterized patients.⁴

In western countries there are a number of proposed study with the incidence of infection post catheterization in surgical ward and emergency ward. In India there is lack of proper study to document in urinary catheterization. In

this study we have compared the incidence of urinary tract infections in between patients catheterized in surgical wards and emergency wards using various parameters of urinary tract infection and catheter tip contamination.⁵

Materials and Method:

All patients admitted to the surgery ward with sample size 120 patients were included. 120 consecutive patients of either sex, admitted to the surgical ward either directly or via emergency with foleys catheter, were included in this study. A baseline urinary culture was obtained for all included patients in order to exclude those with preexisting urinary tract infection. These patients were followed up 48 hours after catheter was removed in order to diagnose a catheter induced urinary tract infection.

The catheter tip culture of all these patients was included in this study. A urine culture were sent by the observer in case were patients developed symptoms suggestive of UTI during the course of their follow up till 48 hours after removal of catheters.

Data was recorded for each patient using a proforma which included the following parameters age, sex, diagnosis at admission, indication for catheterization, place for catheterization (surgical ward/ emergency ward), duration of catheterization, development of UTI during hospital stay, analysis of urine culture and catheter tip culture. Patient will be followed after seven days in both the groups.

Observations and results :

A total of 120 patients were included in this study.

In our study, 5% (6/120) patients were <15 years of age, 40/120 (33.33%) patients belonged to the 15-30 years age group, 25% (30/120) were between 31-45 years of age, 15.8% (19/120) patients were aged between 46-60 years, 17.5% (21/120) were 61-75 years, while 3.33% (4/120) were >75 years old.

In the present study, there were 62.5% (75/120) patients were males and 37.5% (45/120) females.

In the present study, in 52.50% (63/120) patients urinary catheterization was performed in the surgical ward while in the remaining 47.5% (57/120) patients urinary catheterization was performed in the emergency ward.

In our study, the most common indications for catheterization in the emergency ward are listed here: 80.70% (46/57) were burns patients, 8.77% (5/57) were catheterized for titration of urine output, 3.51% (2/57) patients each were unconscious or had chronic urinary retention, and 1.75% (1/57) patient had an acute abdomen or acute urinary retention.

Among the 63 patients in the surgical ward, 42.86% (27/63) were in the preoperative state, 49.21% (31/63) were in the post-operative state, while 7.94% (5/63) patients were bed ridden.

Discussion:

In the present study, there were 62.5% patients were males and 37.5% females of the 125 patients included by Bhatia N and colleagues, 80 were males and 45 were females; a male-to-female ratio of 1.78:1 was observed. ⁶Shackley DC et al reported that males were overall more likely than females (15.7% vs. 10.7%; p<0.001) to have a catheter in place. ⁷In the study by Jansen I and colleagues, comparatively more females (51.4%) were hospitalized with a urinary catheter. ⁸Tiwari MM and associates observed a higher number of females (57.8%) compared to males. ⁶

In the present study, in 52.50% patients, urinary catheterization was performed in the surgical ward while in the remaining 47.5% patients urinary catheterization was performed in the emergency ward. Majority of the patients (73.6%) in the study conducted by Garg et al were catheterized in the medical emergency, while the remaining 26.4% were catheterized in the wards.⁶ In the study by Shackley DC and associates reported the highest prevalence of catheters in critical care(76.6%), which was followed by surgical wards (22.1%), obstetrics(18.8%), medical wards (15.7%) and emergency departments (9.2%) (p<0.001).⁸

In our study, the most common indications for catheterization in the emergency ward are listed here: 80.70% were burns patients, 8.77% were catheterized for titration of urine output, 3.51% patients each were unconscious or had chronic urinary retention, and 1.75% patient had an acute abdomen or acute urinary retention. In the study by Tiwari MM and associates, the indications for urinary catheterization included, surgery or postoperative management (77.6%), monitoring urine output (7%), decubitus ulcer or need for diversion (3.5%), neurogenic bladder dysfunction (2.8%), comfort care in terminally ill (2.1%), urine retention (1.4%), urinary tract obstruction (1.4%), no indication (5.6%).⁸ In the survey carried out by Jansen I et al, 4.3% patients were found to have an inappropriate indication for catheterization at initial placement and at the time of the survey.⁹

Among the 63 patients in the surgical ward, 42.86% were in the preoperative state, 49.21% were in the post-operative state, while 7.94% patients were bed ridden. In the study by Bhatia N et al, 43.2% patients were ambulatory.⁶ The most common indication for urinary catheterization reported by Tiwari MM et al was surgery or postoperative management.⁹

Out of the patients in the emergency ward that underwent urinary catheterization, the duration of catheterization was <3 days in 22.81% patients, as compared to the remaining 77.19% patients wherein the duration of catheterization was >3 days. In all the patients in the surgical ward patients that underwent urinary catheterization, the duration of catheterization was >3 days. The fisher's exact test showed that a statistically significant difference was noted (p<0.0001). The mean duration of catheterization reported by Bhatia N and associates was 4.8 days ranging from 1 day to 16 days.⁶

Conclusion:

In our study, the most common indications for catheterization in the emergency ward are listed here: 80.70% were burns patients, 8.77% were catheterized for titration of urine output, 3.51% patients each were unconscious or had chronic urinary retention, and 1.75% patient had an acute abdomen or acute urinary retention.

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