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"A Systematic Review Of Incidence And Risk Factors Of Catheter-Associated Urinary Tract Infection Among Hospitalized Adults"

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ABSTRACT: A systematic review of incidence and risk factors of (CAUTI) among hospitalized adults. It is a condition that is associated with high states of morbidity, mortality length of catheterization, and hospital cost. Nurse compliance with the CAUTI is the main factor that determines the CAUTI rates. The aim of the study was to evaluate and summarize available evidence about the impact of a systematic review on incidence and risk factors of (CAUTI) among hospitalized adults. The systematic review was performed according to the criteria for the systematic reviews. The review was performed using the articles obtained from the systematic search and a targeted literature review by topic. A comprehensive search was done related to a topic using the Medline and PubMed, Cochrane, and goggle scholar databases, using the keywords related to CAUTI. The study reported that the incidence of CAUTI was more (69.44%) in females and was directly proportional to the duration of catheterization. Also related to the risk factors many studies concluded that female gender, associated disease or co-morbidity, and longer duration of stay in hospital were found to be significant risk factor for CAUTI. This review synthesizes the current state of evidence and proposes strategies to reduce UTIs in hospitalized adults. The health care staff should focus on the risk factors for catheter-associated urinary tract infections. Although the evidence is not as robust, interventions such as incontinence care planning and hydration programs can reduce UTI in this populationand is important for overall well-being.

Keywords : Urinary Tract Infection, Adults

I. INTRODUCTION

Urinary tract disease (UTI) is one of the most prevalent diseases in people constituting about one-fifty million cases around the globe. Past the underlying urinary infection, catheter-associated urinary tract infection (CAUTIs) can lead to confusion including

bacteremia, endocarditis, etc. Those are pathologies that raise mortality rates due to end in a sustained hospital stay. Catheter-associated urinary tract infections are the most common nosocomial infection considered for more than 40% of infections reported by acute care hospitalsand 34% in nursing homes. Basically, catheter-associated urinary tract infection means germscan travel along the catheter and cause an infection in the bladder or kidney. maximum 80% of urinary tract infections are because of the use of an indwelling urinary catheter.

The rate of morbidity and mortality is increasing in hospitalized patients due to catheter-associated urinary tract infections. The main risk factors of catheter-associated urinary tract infection in older age, female gender, diabetes, impaired immunity, lack of antimicrobial therapy, microbial colonization of drainage bag, catheter care violation, dehydration, incomplete emptying of the bladder. Urinary tract infections, including catheter-associated urinary tract infections, can be caused by several bacterial species, including apathogenic Escherichia coli, staphylococcus saprophyticus, Klebsiella pneumonia, Enterococcus faecalis, Proteus mirabilis. Mainly CAUTI results in bacteremia with a case of high fatality rate. The most common signs and symptoms of CAUTI are usually fever, catheter obstruction, acute hematuria, recent trauma, suprapubic pain, costovertebral angle pain or tenderness is helpful to identify a urinary source of fever. Complications in short-term catheterized patients include cystitis, acute pyelonephritis, gram-negative bacteremia, prostatitis, epididymitis, vertebral osteomyelitis, and septic arthritis, a complication that can cause prolonged hospital stay and increased cost and mortality.

1.1.1 Need for the study

In spite of developments in the prevention and management of infections, catheter-related urinary tract infection (CAUTIs) is widespread and remains troublesome. Various measures can be taken to lessen the danger of CAUTI in hospitals. Suitable urinary catheter inclusion techniques are one such strategy. Reducing bacterial invasion across the urethral region has the ability to reduce the possibility of CAUTI. The purpose of this study is to examine to review the incidence and the riskfactors related to CAUTI by gathering the information from various researches done on urinary tract infection. The Centre for diseases control and prevention reported that about twelve percent to sixteen percent of hospitalized adults have an indwelling catheter, and as the day increases the riskfor CAUTI raises by three percent to seven percent.

Knowing the burden of increasing in length of stay in healthcare facilities and establishing coherent incidence research methods will assist in the preparation of appropriate steps to reduce the loadon CAUTI, and this was only the aim the researcher kept in mind while selecting the study. Also, many of the researchers suggested that there is a need to undertake

a clear justification for undertaking a systematic examination and meta-analysis of existing literature, examining the efficacy of antiseptic cleaning during urinary catheter insertion to avoid CAUTI. With keeping in mind, the need of all, the researcher felt the need to review a few of the present articles regarding incidence and risk factors on CAUTI, which will help to lay a better foundation for treating the patients and to prevent CAUTI in the tertiary hospitals. The primary objective of this review was to identify the incidence and risk factors of catheter-associated urinary tract infections among hospitalized adults.

II Research Methodology

Methodology of the research is the basic methods or strategies utilized to classify select, process, andinterpret knowledge regarding a subject matter. It is a means to address the analysis issue gradually by following various actions logically. The methodology helps clarify not just the experimental research results but the procedure itself.

2.1 Search Strategy

The following data sources were searched through Pub med, MEDLINE, database, Cochrane Library via Wiley. Two major systematic search strategies were performed for this review Systematic search one was designed broadly using all data sources described above to identifythe incidence and the other was designed broadly using all data souse relate to the risk factors of CAUTI among the hospitalized patients. The search was done using the keywords as 'CAUTI', 'INCIDENCE', and 'RISK FACTOR'.

2.2 Inclusion Criteria

Primary studies were included if they met the following criteria:

- Research published in the English language between 2010 and 2020;
- Studies that identified the incidence related to CAUTI among the hospitalized adults
- Studies that identified the risk factors related to CAUTI among the hospitalized adults

2.3 Exclusion Criteria

- Studies published before 2010
- Studies concentrating on pediatrics settings were excluded.
- Studies used on strategies to prevent CAUTI by antiseptic solution,

monitoring were excluded.

III Findings and interpretation

Systematic reviews are a type of literature review that uses systematic methods to collect secondary data, critically appraise research studies, and synthesize findings qualitatively or quantitatively. A systematic review answers a defined research question by collecting and summarizing all empirical evidence that fits pre-specified eligibility criteria.

3.1 Studies related to Incidence of CAUTI

Sr no	Author name	Journal name	Study type	Year	Findings and Conclusion
1.	Md. Yousuf Khan. Venkateshwarlu. Srinivas. Rahul	International Archives of Integrated Medicine	Multi-variant analysis	2016l	The overall incidence of CAUTIwas 59%. The incidence of CAUTI was maximum (70.58%) in the age group of51-70 years. The incidenceof CAUTI was more (69.44%) in females and wasdirectly proportional to the duration of catheterization. As most of the CAUTI are asymptomatic, al lcatheterized patients shouldbe screened for CAUTI and be treated depending upon the antibiotic sensitivity of uropathogenic.

2.	Jayasukhbhai D. Mangukiya1, Komal D. Patel, M. M. Vegad	International Journal of Research inMedical Sciences	Descriptivestudy	2015	The incidence of CAUTI in the present study was 31%. A higher incidence of CAUTI (56.46%) was found in the female sex as compared tomales (43.54%). The incidence of CAUTI was found higher in the first weeks (54.83%). Incidence among diabetes patients is found more (63.33%). Most common

					isolate found was E. coli (38.71%) among all uropathogens. Uropathogensisolated from CAUTI aremore resistant toantimicrobial. It is a must toimplement the followingstrategy for reducing the riskof infection due to indwelling catheters: 1. reducing the duration of catheterization 2. Use antibacterial substance coated catheter 3. Strict infection control measures.
3	C. Zhu. H. Liu.Y. Wang.et al	The Journal of Hospital Infection	Multicentre cross-sectional	2019	The prevalence and incidence of UTI's in hospitalized immobilepatients were 1.64% (393/23 985) and 0.69 per 1000 patient-days, respectively. Immobile patients had similar risk factors for UTI as the general population, as well as some additional risk factors. Greater attention isneeded in the management of UTIs among thepopulation of immobile hospitalized patients.

4.	Raminder Sandhu, Pallavi Sayal, Ruchi Jakkhar, GauravSharma	The journalof Health research and reviews in developin gcountries	Prospectiv estudy	2018	Significant bacteriuria wasobserved among 17/161 (10.55%) urine samples.Among bacterial isolates,Gram-negative bacilli predominate. Escherichia coli 7/17 (41.17%) being the most common isolate. The

					incidence of UTI/1000 catheter days and urinary catheter utilization ratio observed in our study was 4.41 and 18.05, 0.673 and 0.066 for intensive care unit and wards, respectively. Burden of CAUTIs is vastwith regards to incidence, patient outcomes, cost, reimbursement, and suffering. Our study underscores the pressing need for the development of antimicrobial urinary catheters and also, we strove to minimize the effect of exogenous factors on the incidences of CAUTI and regarding the development of protocols and checklists on the insertion and management of indwelling urinary catheters based on the UTI prevention guideline.
5	Areena Hoda Siddiqui VipulKumar Srivastava, PP Aneeshamol, Carolyn Prakash	Journal ofpatient safety and infection control	Descriptiv estudy	2017	Average infection rate was 1.78/1000 catheter days. Average of catheter dayswas 11825.To reducemorbidity and length of hospital stay and costs to thepatient, unnecessary catheter insertion should be avoided. If Foley catheter insertion is needed, aseptic precaution during catheter insertion must be practiced and

					removal of Foleys must be done as soon as possible. Continuous education and training of the health-care workers and surveillance by infection control team playan important role inimproving the practice andreducing infection.

3.2 Studies related to Risk factor of CAUTI

Sr no	Author name	Journal name	Study type	Year	Findings and Conclusion
1	Leela Krishna P,Karthik Rao B.	International Journal of advances in medicine.	prospective study	2012-2014	On univariate analysis purpose forurine catheterization, place of catheterization, breach in theclosed system of drainage, duration of catheterization, hemoglobin value less than 10, raised renal parameterswith serum creatinine more than 1.5 were all significantly associated with development of CAUTI Sex of the patient (p value 0.279) and catheter size (p value 0.279) was not found to have a significant correlation with increased

					risk of CAUTI. On multivariate analysis, age, catheter size, diabetes, duration of catheterization, abreach in the closed system of catheter drainage and sex were found to be the significant risk factors associated with CAUTI. An understanding of the riskfactors in development of CAUTI significantly helps in reducing the additional burden on the health care system. Measures such as shortening the duration of catheterization, strict controlof diabetes and sterile precautions in insertion and maintenance of indwelling catheters can help in prevention CAUTI.
2	Daniela Vincitorio , PamelaBarbadoro , Lucia Pennacchietti , IlariPellegrini , Serenella David , Elisa Ponzio , Emilia Prospero	Am J Infect Control .	Survey	2014	Female sex increasing and longer hospital stay before catheter insertion were independent risk factors for catheterization; increasingage, and duration of hospital stay before catheter insertion were associated with CAUTIs. These results underscore the importanceof the proper choice of patients for catheterization, particularly in individuals

					aged >90 years.
3	Allison S Letica-Kriegel, Hojjat Salmansian, David K Vawdrey, Brett E Youngerman, Robert A Green, E Yoko Furuya, David P Calfee, and Rimma Perotte	BMJ open access	Retrospective cohort study	2019	Paraplegia, cerebrovasculardisease and female sex were found to statistically increase the chances of a CAUTI. Using a very large data set, we demonstrated the incremental risk of CAUTI associated with each additional day of catheterization, as well as the risk factors that increase the hazard for CAUTI. Special attention should begiven to patients carrying these risk factors, for example, females or those with mobility issues.

4	Shiva Verma1, *, Shalini Ashok Naik2, Deepak TS3	International Journal of Medical Microbiology and Tropical Diseases	prospective study	2017	Female gender, mechanical ventilation, duration of catheterization ≥ 5 days, Diabetes were independent risk factors while increasing age (≥ 65 years) was not found to be associated with CAUTI.69.2% of CAUTIs were due to bacteria and 30.8% were due to elasticity is common in ICU patients. Females, diabetics, patientson mechanical ventilation and with prolonged catheterization ar eindependent risk factors for CAUTI. Majority pathogens were bacterial in origin and were resistant to multipledrugs.
5	Sawsan A. Omer, Fawkia E. Zahran, Ahmed Ibrahim, Lalia A. Sidahmed, GamilKaram, Fasial Almulhim, Sabri A. Soltan	Journal of Microbiology Research	prospective surveillancestudy	2020	Female gender was significantly associated with CAUTI, where 81.4% females had CAUTI, Associated disease or comorbidity among patients with CAUTI had significant association with CAUTI Patients who stayed longerthan 30days in hospital had significant association with CAUTI , while age, past medical history of UTI, and past history of Foley's catheter

					had no significance association with CAUTI The occurrence of CAUTI

					was more common in patients in wards than ICU. Nearly one third of patients had CAUTI. Risk factors forCAUTI were, femalegender, associated disease orcomorbidity and longer duration of stay in hospital. While age, past medical history of UTI or previoushistory of Foley's catheter insertion had no significantassociation with CAUTI.

Md. Yousuf Khan, C. Venkateshwarlu, G. Sreenivas, P. Rahul (2016) conducted study on a study of incidence and risk factors of urinary tract infection in catheterized patients admitted at tertiary care hospital, Nizamabad, Telgana state, India. Present study included 200 adult patients who received indwelling urethral foleys catheter and urinary drainage system in various wards in government central hospital. The findings of this study were overall incidence of CAUTI was 59% the incidence of CAUTI was maximum 70.58% in the age group of 51-70 years. The incidence of CAUTI was more 69.44% in females was directly proportional to the duration of catheterization. The high incidence in the reflects multivariate analysis. The conclusion of this study was, to conclude the overall incidence of CAUTI was 59% and most of them were asymptomatic found in both sexes in all age group of patients. The high incidence of CAUTI reflects poor catheters are and practice of disconnections of closed system multivariate analysis. prophylactic antibiotics prevent CAUTI. all catheterized patients should be screened for CAUTI and be treated depending upon antibiotic sensitivity of uropathogens.

Jayasukhbhai D. Mangukiya, Komal D. Patel, M. M. Vegad (2015) conducted study on study of incidence and risk factors of urinary tract infection in catheterized patients admitted at tertiary care hospital. total of 200 patients above 16 years in whom an indwelling foley's catheter inserted were taken in the study. the findings of this study the incidence of CAUTI in the present study was 31% higher incidence of CAUTI 56.64% was found in females sex as compared to males 43.54% the incidence of CAUTI was found higher in first weeks 54.83% incidence among diabetes patient is found more 63.33% most common isolated found was E.coli 38.71% amongall pathogens isolated from CAUTI are more resistant to

antimicrobials.. The conclusion of this study was, it is must to implement following strategy for reducing the risk of infection due to indwelling catheters: 1. reducing the duration of catheterization 2. Use antibacterial substance coated 3. Strict infection control measures.

C. Zhu, H. Liu, Y. Wang, X. Wen, S. Cheng, X. Wu, (2019) conducted study on Prevalence, incidence, and risk factors of urinary tract infection among immobile inpatients in China: a prospective, multi- center study. This study was a national multi centre cross-sectional investigation. we recruited six tertiary hospitals 12 non tertiary hospital. we obtained data regarding demographics, clinically related variables. and UTI- specific variables from immobile patients during their hospitalization. The findings of this study were among 23,985 immobile patients, 393 had a UTI. The prevalence and incidence of UTIs in hospitalized immobile patients was 64% and 0.69 per 1000 patient days, respectively. the infection rate of catheter associated UTI was 2.25 per 1000 urinary catheter – days. We found greater number of bedridden days, longer length of hospital stays, being in a medical ward, the presence of indwelling urethral catheter, prolonged duration of an indwelling catheter, use of glucocorticoids, female sex, diabetes mellitus and older age were independent risk factors of UTI.

Raminder Sandhu, Pallavi Sayal, Ruchi Jakkhar, Gaurav Sharma (2018) conducted study on Catheterization-associated urinary tract infections: Epidemiology and incidence from tertiary care hospital in Haryana. this prospective study was done on no repetitive urine samples from catheterized patients. Semi-quantitative bacterial culture was performed, and isolates were identified by standard biochemical test. The findings of this study on significant bacteriuria were observed among 17/161 (10.55%) urine samples. among bacterial isolates, Gram-negative bacillipredominates. Escherichia coli 7/17 (41.17%) being the most common isolate. The conclusion ofthis study was Burden of CAUTIs is vast with regards to incidence, patients' outcomes, cost reimbursement and suffering. our study underscores the pressing needs for the development of antimicrobial urinary catheters and also, we strove to minimize the effect of exogenous factors on the incidences of CAUTI and regarding the development of protocols and checklist on the insertion and management of indwelling urinary catheter based on the UTI prevention guideline.

Areena Hoda Siddiqui, Vipul Kumar Srivastava, PP Aneeshamol, Carolyn Prakask. (2017) conducted study on Catheter -associated urinary tract infection in a tertiary care hospital. A total of 1874 foleys catheter cases were followed for 3 months cases were confirmed as per the centersfor disease control and prevention guideline, the findings of this study was, A total of 21 (6.93') CAUTI cases were confirmed from 303 culture positive samples. the most common isolate was Escherichia coli. Isolates were found resistant to fluoroquinolones and decreased sensitivity was found to other urinary drugs with the exception being colistin which was 100' sensitive. The conclusion of this study was, to reduce morbidity and length

of hospital stay and costs to the patient, unnecessary catheter insertion should be avoided. If foley catheter insertion is needed, aseptic precaution during catheter insertion must be practiced and removal of foleys must bedone as soon as possible.

Leenakrishna p., Karthik Rao B. (2018) conducted study on A study of risk factors for catheter associated urinary tract infection. This prospective study was conducted on 210 patients meeting the requirements of inclusion criteria during September 2012 to February 2014. Detailed history of the patients was recorded. The findings of this study where the mean age of study participants was 51.61 years. Among them 141 were males and 69 were female patients. On univariate analysis purpose for urine catheterization, place of catheterization, breach in the closed system of drainage, duration of catheterization haemoglobin values less than 10, raised renal parameters with serum creatinine more than 1.5 were all significantly associated with development of CAUTI. the conclusion of this study was an understanding of the risk factors in development of CAUTI, significantly helps in reducing the additional burden on the health care system. measure such as shortening the duration of catheterization, strict control of diabetes and sterile precautions in insertion and maintenance of indwelling catheter can help in prevention CAUTI.

Daniela Vincitorio, Pamela Barbadoro, Lucia Pennacchietti, Ilaria Pellegirini, Serenella David, Ellsa Ponzio, Emillia prospero. (2014) conducted study on, risk factors for catheter – associated urinary tract infection in Italian elderly. A CAUTI surveillance program was implemented from October 2011 to April 2012, according to the centers for disease control and preventions nationalhealthcare network methodology. the findings of this study were, A total of 2773 patients aged
>65 years were included in the study, and 483 catheterized patients were monitored for the riskof CAUTI. the catheterization rate was 16.7% and the overall CAUTI incidence rate was 14.7/1000 device -days. the conclusion of this study was, these geriatric cares; Health care associated infection; incidence rate; morbidity; mortality.

Allison S Letica – Kriegel, Hojjat Salmansian, David K Vawdrey, Brett E Youngerman, Robert A Green, E Yoko Furuya, David P Calfee, Rimma Perotte. (2019) conducted study on identifying the risk factors for catheter – associated urinary tract infections: a large cross-sectional study of six hospitals. Urban academic health system of over 2500 beds. The system encompasses two large academic medical centre, two community hospitals and a paediatric hospital. The findings of this study were, the study population was 47926 patients who had61047 catheterizations, of which 861 (1.41%) resulted in a CAUTI. CAUTI rates were found to increases none linearly for each additional day of catheterization; CAUTI- free survival was 97.3% at 10 days, 88.2% at 30 days and 71.8% at 60 days. this instantaneous HR of. 49%-1.65% in the 10-60-day time range. The conclusion of this study was, using a very large data set, we demonstrated the incremental risk of CAUTI associated with each

additional day of catheterization, as well as the risk factors that increases the hazards for CAUTI.

Shiva Verma, Shalini Ashok Naik, Deepak TS (2017) conducted study on etiology and risk factors of catheter associated urinary tract infections in ICU patients. this prospective study was performed over a period of one-year, enrolling patients admitted and catheterized with indwelling urinary catheter for >48 hours in ICU of our hospital. The findings of this study were,out of 163, 26 patients (15.95%) were diagnosed with CAUTI. Risk factors identified fordevelopment of CAUTI were analyzed. Female gender mechanical ventilation, duration of catheterization >5 days, diabetes were independent risk factors while increasing age (>65 years) was not found to be associated with CAUTI. The conclusion of this study was, CAUTI is common in ICU patients. Females, diabetes, patients on mechanical ventilation and with prolonged catheterization are independent risk factors for CAUTI. Majority pathogens were bacterial in origin and were resistant to multiple drugs.

Saswan A. Omer, Fawkia E. Zaharan, Ahmed Ibrahim, Lalia A. Sidahmed, Gamil Karam, Fasial Almulhim, Sabri A. Soltan. (2020). Conducted study on risk factors for catheter associated urinary tract infections (CAUTI) in medical wards and intensive care units (ICU). It is a prospective surveillance study of CAUTI among patients admitted in medical wards and ICU in KFHH, in the period of May to August 2017. All patients with medical conditions other urinary tract infection, and had been catheterized with foleys catheter were included in the study and datawas collected from the medical record. The findings of this study were, the total number of patients was 200, most of the patients were females (72%), 82.5% of the patients were in general medical ward and 17.5% were in ICU, past medical history of urinary tract infection. the conclusion of this study was, the occurrence of CAUTI was more common in patients in wards than ICU. nearly one third of patients had CAUTI. risk factors for CAUTI were, female gender, associated disease or co-morbidity and longer duration of stay in hospital.

3.2 Appraisal of Studies

3.2.1 Study Design

Out of the 6 studies included in the review of effect on pain while doing nursing procedures; 2 are descriptive, , 1 is observational,1 is randomized control trial, 1 is parallel classified clinical trial,1 is exploratory research design,. All these studies addressed the rate of compliance on pain the patient in ICU in the results.

Out of 5 studies included in the reviews of effect on hemodynamic parameter while doing nursingprocedures 2 were quasi experimental studies, 1is randomized cross over clinical trial and 1 is single blind clinical trial All these studies addressed the rate of compliance on

hemodynamic parameters the patient in ICU in the results.

3.2.2 Sample

Jeanne Young (2005) suggest that carefully description of study participation setting sample selection and size should be reported. The authors state that descriptions of study participants' characteristics and setting in which they were studied are necessary so that readers can assess generalize of the results of the study. The authors also explain that description of sample selection and size helps the readers to detect internal validity associated with ascertaining statistically significant and clinically important differences of a given size if such differences exist. Investigators for all the 11 studies reported participants, setting, sample size in their studies.

3.2.3 Data Collection

Relevant data for the selected studies were collected from different database like pub med scholar,Mendeley, ERIC database library, coherence database Research gate.

3.3 Results

There was wide varied of results in the studies as some studies showed that the incidence of CAUTI was 59%, while in some studies it was depict that the incidence was 31% to some studies revealed it up to 69%. The studies also supported that the incidence of CAUTI was maximum (70.58%) in the age group of 51-70 years. The incidence of CAUTI was more (69.44%) in females and was directly proportional to the duration of catheterization. Also related to the risk factors many studies concluded that female gender, associated disease or co-morbidity and longer duration of stay in hospital were found to be significant risk factor for CAUTI. As many of the studies finding supported that the incidence rate was high for catheter associated infection and thenumber of hospital day stay was much significant its out most important that catheterized patients should be screened for CAUTI and be treated depending upon antibiotic sensitivity of uropathies.

IV DISCUSSION

We performed a broad systematic review search on incidence and risk factor of CAUTI. While many studies reported burden of CAUTIs is vast with regards to incidence, patient outcomes,cost, reimbursement, and suffering. The studies also supported that the incidence of CAUTI was maximum (70.58%) in the age group of 51-70 years. The review confirm that the incidence rate ishigh for urinary tract infection due to catheter, and proper measure to reduce the same should be taken. With regards to the risk factors, it was studies that the comorbidity, diabetes, cerebrovascular disease and female sex were found to statistically increase the chances of a CAUTI. Using a very large data set, we demonstrated the incremental

risk of CAUTI associated with each additional day of catheterization, as well as the risk factors that increase the hazard for CAUTI. Special attention should be given to patients carrying these risk factors, for example, females or those with mobility issues. Reduction of hospital stay, and proper aseptic technique used while insertion of catheter with continuous catheter care can reduce the incidence rate.

The strength of this review is the detailed and broad search strategy is applied with generous inclusion of studies to highlight the available incidence and details of risk factor that have been studied and can be implemented for further measures to prevent CAUTI.

V CONCLUSION

This review synthesizes the current state of evidence and proposes strategies to reduce UTIs in hospitalized adults. The health care staff should focus on the risk factors for catheter associated urinary tract infection. use the appropriate measures to reduce its incidence and related mortality.measures such as shortening the duration of catheterization, strict control of diabetes and sterile precautions in insertion and maintenance of indwelling catheter can help in insertions andmaintenance of indwelling catheters can help in prevention CAUTI. the treatment of these patients in a specific and distinctive fashion so as to reduce the risk of infection. by understanding the needs and technical modifications necessary in these patients, hospital system and health care staff can limit their patient's exposure to CAUTI. Interventions that motivate catheter avoidance and catheter removal to prevent CAUTI in acute care and hospital settings aresupported by the strongest available evidence, although the strength of available evidence is currently less in the nursing home setting. Although the evidence is not as robust, interventions such as incontinence care planning and hydration programs can reduce UTI in this populationand is important for overall well-being

VI RECOMMENDATIONS

- Education is a must for the successful implementation of nursing practice. Systematic rationale of each procedure should be adopted while doing the procedures.
- Clinical guidance for the assessment of pain for the best care of patient isrecommended.
- Clinical guidance for the assessment of hemodynamic parameters for the best care ofpatient is recommended
- Evidenced based protocols should be administered to improve the quality of careincreased risk of CAUTI

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