The Prevalence of Nosocomial Urinary Tract Infections in patients with indwelling urinary catheters at Kenyatta National Hospital

By

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A research proposal in part fulfillment of the Master's degree Programme in Human Pathology.

ABSTRACT

Urinary tract infection is one of the most common forms of nosocomial infection in patients and urinary catheterization is the most frequent predisposing factor. These infections cause considerable morbidity and mortality and confer a great financial burden on the medical care system. This study was performed to determine the incidence of catheter-associated bacteriuria, to isolate the etiologic organisms, and to assess their sensitivity most frequently prescribed antibiotics.

Methods

Two urinary specimens were taken from the catheters of 80 patients admitted at Kenyatta National hospital general wards and special units who carried an indwelling urinary catheter for a duration of >12 hours. The first specimen was taken at the time of catheterization and the second was taken after 72 hours.

Results

Of 80 patients, 16 (20%) had a positive culture from which six different strains were isolated. 37.5% of the strains belonged to *Escherichia coli*. All of these strains were sensitive to Meropenam and Tazopiperacillin. The sensitivity to commonly used antibiotics like Gentamicin and Ciprofloxacin was poor at 43.8% and 37.5% respectively. Most of the organisms isolated were moderately sensitive to Augmentin (62.5%), Cefuroxime (68.8%), Nalidixic acid (56.3%), Amikacin (56.3%), Nitrofurantoin (50%), and Ceftazidime (68.8%)

Conclusion

From this study it is appropriate to conclude that the prevalence rate at KNH is high at 20% and that the commonest Catheter associated urinary tract infections (CAUTI) nosocomial microorganisms are enteric bacteria including *E coli and Klebsiella pneumoniae*. . Most organisms isolated show considerable resistance to the commonly used antibiotics including Gentamicin, Ciprofloxacin and Ceftriaxone and that Tazopiperacillin and Meropenem seem to be the most effective antibiotics for Nosocomial CAUTI

BACKGROUND

The battle between man and microbe is most obvious in institutions where vulnerable people are crowded together. Historically, hospitals have had a notorious reputation for nosocomial infections.

The hazards of puerperal sepsis and the horrors of septic infection in the pre-Listerian era have been well documented; admission to hospitals in the mid 19th century was a sure way of acquiring gangrene and even possibly death.[1]

In the past two decades advances in technology and therapeutics have produced greater number of highly susceptible patients requiring treatment in hospitals and this is aggravated by the occurrence of transferable resistance to antibiotics in pathogenic bacteria and the emergence of new pathogens transmitted by a variety of routes.

Over time, surgical and medical techniques have developed dramatically and basic standards of hygiene have improved and identification and treatment of most infectious microorganisms have been made possible.

In spite of these advances in medicine many countries still have pressure on health care facilities and shortages of trained staff makes it difficult to practice adequate infection control. Infection acquired in hospitals remains a major cause of morbidity and mortality leading directly or indirectly to an enormous increase in the use of hospital care and to the emergence of new health hazards for the community.

Most patients infected with nosocomial infections have a predisposition caused by invasive supportive measures such as intubation and the placement of intravascular lines and urinary catheters.

On average around 7 - 10% of all hospital patients will develop an infection as a result of their stay in the hospital. Urinary (30 – 40%), respiratory and wound infections are the most common. [2]

In the United States of America nosocomial infections are estimated to occur in 5% of all acute care hospitalizations. The estimated incidence is more than 2 million cases per year, resulting in an added expenditure in excess of $2 billion.