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**PREVALENCE OF NOSOCOMIAL
INFECTION IN TUTH**



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2021

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Executive summary:

Nosocomial infection is the infection acquired by patient, patient party or hospital staff from hospital. Generally infection occurring after 48 hours of hospital stay is said to be hospital acquired.

A cross section observational study was done. In this study, ten different wards (Orthopedic, Eye/ENT, Obstetrics, Male Medical Ward, Female Medical Ward, Male Surgical Ward, Female Surgical Ward, Annex-I, Annex-II.) of TUTH were observed. Total of 171 patients were observed, out of which four were found to have nosocomial infection. Hence, point prevalence of such infections in the hospital was calculated to be 2.35%.

The commonest form of nosocomial infection was infection of surgical wound.

Introduction:

Nosocomial infections are exogenous or endogenous infection appearing during hospitalization and were neither present nor incubating at the time of admission. Generally, infection seen after 48 hours is said to have incubated in hospital. Infections incubating at the time of discharge and becoming apparent after patient is at home are also included.

There are two main factors related to the incidence of nosocomial infection:

- Microbial factor
- Host factor

Microbial factor includes virulence of the organism, sensitivity pattern etc. Due to exposure to various antibiotics, microbes in hospital are resistant and difficult to treat. Host factor includes the risk factors to which the patient is exposed, e.g. Urinary catheters, surgical procedures, i.v devices, inhalation therapy, abnormal host defense mechanism, extreme of age, prolong hospitalization.

Most nosocomial infections (80- 90%) originate from endogenous source, i.e. normal or altered flora in hospitalized patient; exogenous sources

include instrumentation contaminated equipments, i.v devices, etc. Infections from exogenous sources are easier to control than those from endogenous sources if the sources are identified.

Nosocomial pathogens may be bacteria, virus, fungi, and parasites. Among bacterial pathogens Gram-negative bacilli are the commonest cause followed by Staphylococci and Streptococci.

Among the various nosocomial infections, UTI is said to be the commonest followed by infection of surgical wound and RTI

Objectives:

- ❖ To assess the magnitude of nosocomial infection.
- ❖ To find out commonest nosocomial infection.
- ❖ To find out risk factor for nosocomial infection.
- ❖ To prepare baseline data for proper management.

Methodology:

The study type was cross-section observational study. Patient who had spent at least 48 hours in hospital and were admitted for disease other than infection were included in the study (Population at risk). All patients included in the study were looked for nosocomial infection. The study was done in -i) Male Surgical Ward, ii) Female Surgical Ward, III) Male Medical Ward, iv) Female Medical Ward, v) Annex-I, vi) Annex- II, vii) Eye, viii) ENT, ix) Obstetrics, x) Orthopedics Ward.

In order to access all patients under same criteria, following points were taken into consideration on the basis of which nosocomial infection was found:

-Febrile condition (above 37.2C or above 99F) and increased total leukocyte count at the time of observation. Fever suppressed by drug therapy was also noted by observing patients record.

-In depth history of patient who had positive febrile condition and high Total Leukocyte Count.

-Doctor's consultation.

Medical students were sent to different wards with slip of paper of following format:

Ward Name:
Bed no:
Febrile condition: Yes <input type="checkbox"/> No <input type="checkbox"/>
Increased TLC: Yes <input type="checkbox"/> No <input type="checkbox"/>
Nosocomial infection: Yes <input type="checkbox"/> No <input type="checkbox"/>
Type of infection: _____

Taking into consideration the above points, slips were for patients included in the study. They were collected and tabulated which showed the commonest nosocomial infection. Point prevalence of nosocomial infection in the hospital was calculated using following formulae:

$$\text{Point prevalence} = \frac{\text{No. Of patients with nosocomial infection at the time of Observation}}{\text{Population at risk}} \times 100$$

Point Prevalence of individual ward was also calculated using following formulae:

$$\text{Point prevalence} = \frac{\text{No. Of patients with nosocomial infection in the ward at the time Of observation}}{\text{Population at risk in the ward}} \times 100$$

Some patients were recently shifted from one ward to another, which may have skewed the point prevalence of the ward. So to avoid this, patient was considered the population at risk of the ward in which he had spent last 48 hours.

Infection among patient parties and hospital staffs were not included in the study.

Result:

Each ward was observed at a point of time. Total of 171 patients were examined out of which four were found to have nosocomial infection (1 in male Surgical Ward, 2 in Female Surgical Ward, 1 in Annex I; Other wards didn't show any such case.)

All four patients who had nosocomial infection in various wards were exposed to surgical procedure and had infection of surgical wound.

Point prevalence of nosocomial infection in various wards were 5.5% in Annex I, 5.88% in MSW, 10.52% in FSW and zero in other wards.

The overall point prevalence in the hospital was 2.35%.

S. No	Ward Name	No. Of patient at risk.	No. Of Cases	Point prevalence of the ward.	Point prevalence in the hospital.
1	Eye	23	0	—	2.34%
2	ENT	12	0	—	
3	Annex-I	18	1	5.5%	
4	Annex-II	23	0	—	
5	MMW	15	0	—	
6	FMW	5	0	—	
7	MSW	17	1	5.88%	
8	FSW	19	2	10.5%	
9	Orthopedic	28	0	—	
10	Obs/Gyne	11	0	—	

Total

171

4

Though literature shows Urinary Tract Infection to be the commonest infection, this study has pointed to Surgical Wound infection; it may be due to prophylactic antibiotic therapy given to such patient.

Reference:

- ◆ Preventive and Social Medicine by Park & Park.
- ◆ Text Book of Medicine by Harrison.
- ◆ Infectious Disease by Robert.
- ◆ Medical Biostatistics by Mahajan.
- ◆ British Medical Journal.

