

MANAGING HOSPITAL ACQUIRED INFECTIONS

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ABSTRACT

Hospital Acquired Infections (HAI) cause prolonged hospital stay, inconvenience for the patient, constitute an economic responsibility on health care organizations and increase the mortality of hospitalized patients. HAI or Nosocomial infection is one of the most important causes of mortality and morbidity in hospital. The aim of this study is to identify the major infections acquired in a hospital, their causes and highlight the steps to manage the various hospital acquired infections. The most common HAI category is urinary tract infection (UTI) followed by respiratory tract infection (RTI) and surgical site infection (SSI). The reasons of hospital acquired infections include hand washing practices, equipments and tools handling, cross infection, over dosage of antibiotics and various others. Infection control is a necessary component of safe high quality patient care and essential for well being of the patient and staff. The HAI can be managed by ensuring behavioral changes and following standard practices. Most of the hospitals constitute an Infection control team involving people from across the functions in order to manage the HAIs in their hospital and thereby ensure patient centric, cost effective and quality healthcare.

KEYWORDS: - Hospital-acquired Infection, Major Infections, Surveillance,

INTRODUCTION

World health organization defines nosocomial infection or hospital acquired infection as An infection acquired in hospital by a patient who was admitted for a reason other than that infection. An infection occurring in a patient in a hospital or other health care facility in whom

the infection was not present or incubating at the time of admission. This includes infections acquired in the hospital but appearing after discharge and also occupational infection among staff of the facility. An infection occurring after 48 hours of admission is considered as nosocomial infection. High frequency of nosocomial infection reveals a poor quality of health care system.

There are two type of infection found in the hospital

- Hospital associated infection.
- Hospital acquired infections.

Hospital Associated Infection:-Hospital associated infection are those, that are acquired during hospitalization as well as those that are present upon admission, having been acquired prior to hospitalization.

Hospital Acquired or Nosocomial Infection:-It can be defined as “infection acquired by the person in the hospital, manifestation of which may occur during hospitalization or after discharge form hospital. The person may be a patient, members of the staff, and visitors.

A **hospital-acquired infection (HAI)**, also well known as a **nosocomial infection**, is an infection that acquired in a hospital other health care facility. To emphasis both of hospital and non hospital settings, it is sometime alternatively describe as **health care associated infection (HAI or HCAI)**. Such infection can be acquired in hospital, nursing home, reclamation facility, outpatient clinic other clinic setting. Infection is span to the susceptible patient in the clinical setting by various means. Health care staff can spread infection, in adding to contaminated equipment, bed lines, or air droplets. The infection can originate from outside environment, one another infection patient, staff that may be then infected, or in some cases, the reference of the infection cannot be determined. In the some cases the microorganism originates the patient on his own skin micro biota. Becoming opportunist after surgery or other procedures that compromise the protective skin barrier. Even thought the patient may have equipment, bed lines, or air droplet. The infection can originate in the outside environment. Other infected patient, staff that may be infected, in some cases. The source of infection cannot determine. In some cases the microorganisms develop start from the patient’s skin macrobiotic.

OBJECTIVES

- Identifying the major types of infections.
- What are the reasons of hospital acquired infection.
- Identify the consequences of hospital acquired infection.
- Suggest measures to manage of hospital acquired infection.

METHODOLOGY

The research paper is based on secondary data and the study was conducted by-

- Reference to available journals, books, newspaper(local and international),
- Study of presently accessible and nosocomial infection performed by the top hospital in India.
- Referring to the internet websites, YouTube videos etc.

DISCUSSION AND FINDINGS

A) Major Hospital Acquired Infections:

Type of nosocomial Infection	Simplified criteria
Surgical site infection (SSI)	Any purulent discharge, abscess, or spreading cellulites at the surgical site during the month after the operation
Urinary infection	Positive urine culture (1 or 2 species) with at least 105 bacteria/ml, with or without clinical symptoms

Respiratory infection	Respiratory symptoms with at least two of the following signs appearing during hospitalization: — cough — purulent sputum — new infiltrate on chest radiograph consistent with infection
Vascular Catheter infection	Inflammation, lymphangitis or purulent discharge at the insertion site of the catheter
Septicemia	Fever or rigours and at least one positive blood culture
Blood stream infection	Bacteremia is an invasion of the blood stream by bacteria.
Pneumonia infection	Pneumonia is an infection is one or both lung. It can be caused by fungi bacteria or viruses.

B) Major reasons of hospital acquired infection-

- Cross-transmission (transmission between individuals)
- Hand transmission
- Airborne agent
- Agent present in water, waterborne agent
- Food borne agent

C) Consequences:-

- There is a chance of development of multi-resistance organisms which may be endemic in the hospital and epidemic in community due to spread causing a serious issue.
- Socio- economic burden due to direct medical cost and indirect medical costs related to diminished quality of life.
- Extra cost for hospital stays due to bed occupancy
- Funds allotted for hospital by government being diverted by HAI.
- Extra due to duration of stay in hospital.
- Additional morbidity and mortality Rates due to HAI.
- Physical and psychological sufferings to the patient
- Possible guilt feelings for an individual or team
- Cost increase in the hospital.
- Poor impact in the hospital.
- Extra surgical producer.
- Poor quality in the hospital.
- Extra cost for hospital stays due to bed occupancy.
- ICU prolonged stay in hospital. i
- Hematological, biochemical, microbiological and radiological tests. iv. Antibiotics and other drugs.

D) Controlling Infection In Hospital:-

The administration of the hospital must provide leadership by supporting the hospital infection programme and be responsible for

- Establishing a multidisciplinary infection control committee
- Identifying appropriate resources for a programme to monitor infections and apply the most appropriate method for preventing infection.
- Ensuring education and training of all staff through support of programmes on the prevention of infection in disinfection and sterilization techniques.
- Delegating technical aspects of hospital hygiene to appropriate staff

- Reviewing approving and implementing polices approved by the infection control committee

Spread of infection can be controlled and reduced by-

- **Awareness**

- Strict hospital infection control procedures and policies
- Correct and frequent hand hygiene measure by all hospital staff and patient
- Cautions use of antibiotic medication
- Infection control is the responsibility of all health care professionals- doctor, nurses., therapists, pharmacists, engineers and other.

- **Infection control and standard operating procedures-**

- The organization should have infection control manual which should be updated periodically.
- The rules of proper disposal of BMW should be followed.
- The organization should have well designed and coordinated program of infection control.
- The organization must take right actions to control outbreak of action.
- There should be documented procedure for sterilizations in the hospital.

- **Hospital infection control committee**

An infection control committee provides a forum form multidisciplinary input and cooperation and information sharing. This committee should include wide representation form relevant programmes management, physicians other health care worker, clinical microbiology, pharmacy, central supply, maintenance, housekeeping, training services. The committee must have a reporting relationship directly to either administration or the medical staff to promote programme visibility and effectiveness. The roles of infection control committee are:

- To review and approve a yearly programme of activity for surveillance and prevention.
- To review epidemiological surveillance data and identify areas for intervention.
- To assess and promote improved practice at all levels of the health facility.

- To ensure appropriate staff training in infection control and safety.
- To review risk associated with new technologies and monitor infectious risk of new devices and products prior to their approval for use.

CONCLUSION

Majority of HAIs are potentially preventable by implementation of evidence based interventions. The priorities among the interventions for prevention of HAIs should be hand hygiene practices and comprehensive monitoring antimicrobial stewardship program , sanitation and disinfection practices safe injection practices and surveillance system for HAIs.

Studies have shown that at least 35 to 40 % of all HAIs are associated with only six basic principles of infection prevention. The hospital administration should consider these while formulating and implementing the infection control techniques/ processes.

Good practice with respect to the prevention, control and management of hospital acquired infection needs to be more widely known and applied.

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