

Nosocomial Infection: Causes Treatment and Management

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Hospital Acquired Infection

Hospital acquired infection is also known as nosocomial infection or health care associated infection it is occur when patient admitted in hospital but with other type of infection or at the time of admission in hospital infection is not usually present in patient or it is usually occur in hospital during medical care of patient and this is the basic reason of death in hospitalized patient it can affect the patient emotional stress, decrease the quality of life, and increase the patient stay in hospital it can also transmitted to the community when the patient discharge [1].

Causes of Hospital Acquired Infection

Microbes

During medical care in hospital patient are exposed to a verity of microorganism which can cause much clinical disorder it may cause by microorganism present in other patient admitted in hospital known as cross infection.

Patient susceptibility

It includes

- Age of the patient
- Immune system
- Transmission of disease from staff and another patient among the patient
- Any type of comorbid disease
- Diagnostic procedures
- Using contaminated object inserted directly into the tissue [2]

Causative Agent

The most common causative agent of nosocomial infection is Staphylococcus aureus, E coli, pseudomonas areginosa and it is not just link to bacteria it is also cause by fungi as well by virus. Infection usually occurs up to in 48 hours when admitted in hospital

or occur within 3 days after discharge they can transmit through hand, through oral, parenteral, aerial and vector borne (Figure 1).

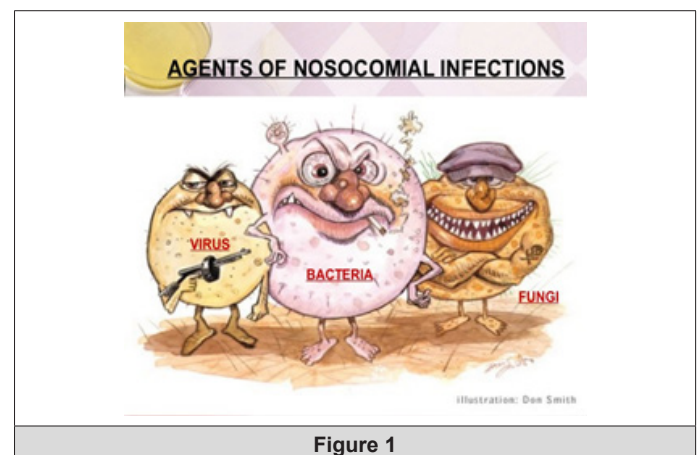


Figure 1

Types of Nosocomial Infection

The most common nosocomial infection or hospital acquired infection are include (Figure 2):

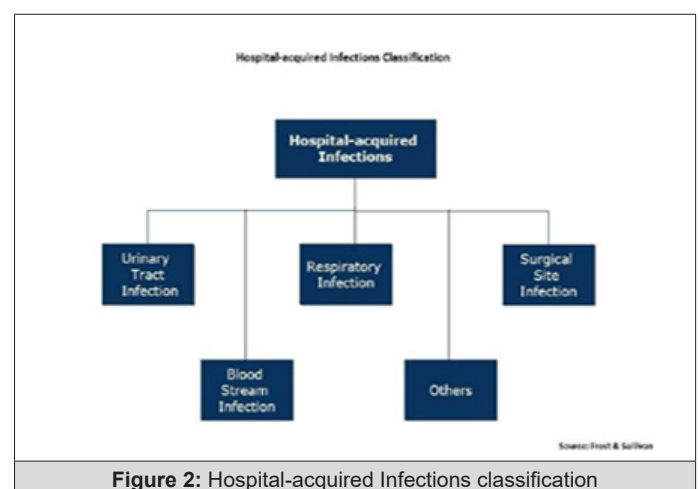


Figure 2: Hospital-acquired Infections classification

- Blood stream infection
- Urinary tract infection

- C. Infection of surgical wound
- D. Pneumonia (ventilator associated) [3]
- A. Blood stream infection

It is called center line associated blood stream infection. It is used for IV medication, treatment there risk increase when they are placed in center line and its prolong use can cause blood stream infection as germs can enter into the blood and to prevent this different guideline are provided that is before insertion of catheter should educate the patient and to avoid catheter to place in femoral vein do not use catheter for prolong period of time [4].

- B. Urinary tract infection

The most common type of nosocomial infection is catheter associated urinary tract infection which is caused by the patient native micro flora about 75% patient are affected by this its occur due to prolong use of catheter which is inserted in the bladder for the urinary drainage so to prevent this catheter can be use under the supervision of expert and can be use when it is necessary and should be remove as soon as possible because it may cause some serious consequences like prostatitis, meningitis, cystitis etc., [4].

- C. Surgical site infection

This is the 2 most common type of infection occur in hospital caused by staphylococcus aureus it can occur usually in that type of part where surgery occur and sometimes it involves the skin only. It can develop usually after 30 days of operation it includes superficial incision in which pus can produce from the wound area in deep incision SSI pus can be produce from the wound when it reopens. It can be treated by taking antibiotic, if complications occur then sometime another surgery is also required, and it can also be prevented by maintaining hygiene condition [5].

- D. Pneumonia (Ventilator Associated)

It is usually occur when patient is on ventilator which provide oxygen to them through a tube which is attach to the mouth and nose of the patient if the germs can enter into the mouth through this tube then this infection take place which is usually occur in 9 to 27% of patient. It is usually occur by both gram negative bacteria like Pseudomonas aeruginosa, E.coli, staphylococcus aureus. It is usually diagnosis when the patient can develop infiltrate on chest radiograph, leukocytosis, and produce purulent tracheobronchial secretions [6].

Treatment and Management

There are various types of treatment present, but it depends on the severity of the infection and the causative agent is the responsibility of the medical care center to prevent hospital acquired infection by following different guideline and these are (Figure 3):

- a) Observe the patient in ICU or any other ward that if the

patient need isolation or not to stop the transmission of disease

- b) Hygiene condition should be maintaining by washing hands before and after touching the patients
- c) Any type of object insertion in body should be in aseptic condition
- d) Infection control program should be developed
- e) Antimicrobial use should be appropriate
- f) Air borne precaution should provide
- g) Use aseptic catheter for UTI infection and the urinary bag never have contact with floor
- h) Whenever possible use noninvasive ventilator
- i) Ventilator circuit routinely changing is not required
- j) For the insertion of catheter Prefer the upper extremity
- k) Wash or clean your skin with chlorhexidine
- l) Should frequently change needleless connectors [7-10].

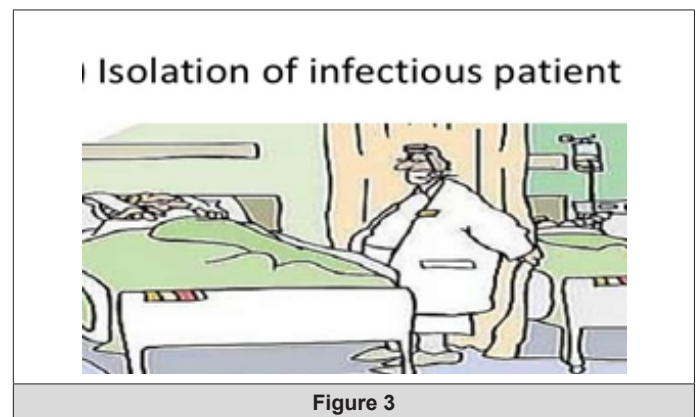


Figure 3

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