

## Incidence and risk factors of healthcare-associated infections in neonatal intensive care unit in a Tertiary hospital in Saudi Arabia during 2018

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### Abstract

**B**ackground:

Healthcare-associated infection is a common issue of patients in neonatal intensive care units and is one of the leading causes of death in this group of patients.

These infections occur worldwide both in civilized and developing countries. Nosocomial infections constitute 7% in civilized and 10% in developing countries. According to WHO estimates, approximately 15% of all hospitalized patients suffer from these infections.

The rate of healthcare-associated infections (HAIs) increases with the degree of both prematurity and low birth weight.

This study aimed at measuring the incidence rate, causative microorganisms, outcome and associative risk factors of Hospital-acquired infections in neonatal intensive care unit in a tertiary hospital in Saudi Arabia during 2018.

Materials/methods:

A prospective longitudinal study was conducted at King Faisal Medical complex hospital, NICU in Taif, KSA. Data was collected from the surveillance sheet. This study has included all cases admitted from January 2018 to June 2018.

Results:

This study covered 440 participants from King Faisal Hospital Taif, KSA. The study found out that, males and females were 242 (55%) and 198 (45%) respectively. The incidence rate of HAI was found to be 1.76 per 1000 patient-days. Incidence rates by types included CLABSI, VAP, laboratory-confirmed bloodstream infection were 7.75 per 1000 patient-days, 0.43 per 1000 pt. days, and 1.1 per 1000 patient-days respectively.

The main causative organisms were Klebsiella Pneumonia-ESBL 6 (42.8%), E.coli ESBL, 3(21.4%), Staphylococcus

Epidermidies 2 (14.2%), MRSA 2 (14.2%) and Serratiamarscescens1 (7.1%).

In this regard, associated factors include, (47%) of study participants were delivered by caesarian section, (41%) low birth weight, (42%) preterm, (68%) Premature, (67%) had Respiratory Distress Syndrome, (6%) Umbilical Vein Catheter, (2%) of study participants had PICC. Binary regression was done to measure the relationship between possible risk factors and HAI found out that HAI is significantly associated with PICC (P-value 0.00). In this regard, the outcome was 40 (92%) discharged well and 30 (7%) were dead.

Conclusions:

This study concluded that Incidence rate of HAI is not with international level (NHSN Pooled mean/year). Efforts should be focused on developing more effective prevention strategies to accomplish better outcomes among neonates.



### Biography:

Nuha Ahmed is working at Infection Prevention and Control Department, King Faisal Medical Complex, Taif, Saudi Arabia.

### Speaker Publications:

1. Antibiotics- loaded nanoparticles to treat drug resistant bacteria; 13-15 March 2018. ; europepmc/Antimicrobial Resistance and Infection Control. 2018 ;7(Suppl 1).

2. Successfully control of methicillin resistance Staphylococcus aureus in neonatal intensive care unit in Taif, Saudi Arabia

europepmc/Antimicrobial Resistance and Infection Control. 2018 ;7(Suppl 1).

3. Evaluation of knowledge about HIV-infection and its relation to probiotics among female students of Hail University; Antimicrobial Resistance and Infection Control. 2018 ;7

4. Antibiotic resistance among clinical Klebsiella isolates in 2010 and 2017; europe pmc/ 5975278

5. Physical activity and major non-communicable diseases among physicians in Central Saudi Arabia; go.gale/ Saudi Medical Journal(Vol. 37, Issue 11)

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