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MICROBIAL TROUBLES OF HOSPITALIZATION

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Abstract

The present day's hospital-acquired infection, also referred to Nosocomial Infection (NI), is not only becoming a major concern for hospitalized patients, but also an expensive burden on a country's budget. It is discussed in this paper that most of such infections that are reported include urinary tract infection, respiratory tract infection, surgical site infection and blood stream infection. A lot of reports state that NI is a global issue with high mortality rates and it poses a costly challenge for a country's economy. Even though a lot of prevention strategies are used for controlling NI, it is still a crucial health problem faced by the modern-day world. This letter invites scholars for a better solution suggestion to control of NI.

Keywords: Hospital-acquired infection, Nosocomial, Public health, Health care.

1. Short Communication

The expression "nosocomial" refers to any disease a patient contracts while availing medical care (Bereket, 2012). Nosocomial infection (NI), also referred to as a hospital-acquired infection (HAI), is a microbial infection with which a patient is infected during hospitalization (Bereket, 2012). A number of articles mention various other definitions of NI; this article cites some of these definitions. For example, any systematic or localised conditions acquired from a reaction with an infection agent or with a toxin (Nautiyal, 2015). As per another definition, an infection contracted due to the environmental conditions of a hospital, such as one that the hospital staff is infected with or one which a patient acquires due to other reasons during hospitalization (Nautiyal, 2015; Kouchak, 2012). Night-sweats, inflammation, pain, fever, infection, swelling and breathing difficulties are some of the major symptoms of NIs (Nautiyal, 2015).

These infections (NIs) can be clinically noticed while the patient is still hospitalized or after discharge (Bereket, 2012). Since the very inception of hospitals, NIs have existed and are a persistent and noticeable health problem that

occur in all countries regardless of the country's income levels. Even now, in the modern age of antibiotics, they continue to be a hazard (Kouchak, 2012;Berekat, 2012).These days, the increased use of antimicrobial agents and advanced lifesaving medical practices expose the patients to invasive procedures, rendering to an increased threat of NIs (Berekat, 2012).

NIs are a crucial problem for the society's health. NIs affect about one out of twenty patients who are hospitalized (Schmunis, 2011). It was reported in the year 2002 that over 1.4 million patients across the world are diagnosed with NIs (WHO, 2002). As per a research conducted by World Health Organization (WHO) in 2002, it was found that the South-East Asian regions (10%) and the Eastern Mediterranean regions (11.8%) had the highest frequencies of NIs (WHO, 2002). In a research conducted by WHO in 2014, it was noticed that 8.7% of NIs are from the four regions, namely South-east Asia, Eastern Mediterranean, Europe and Western Pacific (Mohammad, 2014). Past research shows that patients contracted NIs in above 40% of hospitalizations in parts of sub-Saharan Africa, Latin America and Asia and in 5 to 10 per cent of all hospitalizations in Europe and North America (Bereket, 2012; Ahmed, 2015).

Urinary tract infection (UTI), respiratory tract infection (RTI), surgical site infection (SSI) and blood stream infection (BSI) are the most frequently occurring NIs and they pose an enormous threat which the health care professionals have to tackle (Mohammed, 2014). As per the data available in 2008, the distribution of the afore-mentioned 4 types of NIs in acute care hospitals of the developed world is as follows: 35% for UTIs, 10% for RTIs or pneumonias, 25% for SSIs or post-operative wounds, 10% for BSIs and 20% for other types of NIs (Wenzel, 2008). NIs were assessed in the Neonatal Intensive Care Units (NICUs) of University of Utah Medical Centre, Salt Lake City and Kuala Lumpur, Malaysia(Haifah, 2000). It was found that 15.3% infants hospitalized for more than 48 hours in the Utah Medical Centre and 5.2% infants hospitalized for more than 48 hours in Kuala Lumpur had contracted NIs (Haifah, 2000). A study conducted in Canada in 2008 reported that UTIs were the most common NIs, followed by RTIs (3.0%), SSIs (2.5%) and BSIs (1.6%) (Health H Q, 2013). In the Netherlands (2009), the most common nosocomial infections were SSIs (4.8%), followed by RTIs (1.1%), UTIs (1.7%) and BSIs (0.5%) (Health H Q, 2013). In India (2014), UTIs were 33.1%, followed by BSIs (13.10%), RSIs (15.5%), SSIs (14.8%), and other Nis with 23.5% (Mohammad, 2014).

Based on the data available in 2014 from a research done in USA, a research was conducted by the Centre for Disease Control and Prevention (CDC) in 2016. Some decrease in the rates of NIs was reported due to prevention practices; for example, a 2% decrease was noted in SSIs occurring during colon surgeries done between 2008 and

2014; and 8% decrease was noted in *Colestridiumdifficile* infectionsbetween 2011 and 2014, but there was no change in overall catheter-associated urinary tract infections (CAUTIs)between 2009 and 2014; however, as it was commented by the researcher, much more work remains to be done (Prevention, 2016).

In spite of the worldwide efforts to reduce prevalence and occurrence of NIs, they are still known as major causes of mortality, increased morbidity and emotional stress among hospitalized patients (WHO, 2002; Bereket, 2012). NIs also account for noteworthy losses and additional burdens on hospitals (WHO, 2002). The highest mortality rates in developed countries belong to RSIs and BSIs, approximately 25–30% (Wenzel, 2008). The overall death rate due to all device-associated NIs contracted by patients in ICUs from hospitals in Malaysia was 6.5% (Lin, 2015).

The additional financial burden caused due to NIs includes direct costs like the ones associated with patients' additional stays (10–14 days) in hospitals for therapy; together with the variable costs with about $500/day (Wenzel, 2008). This additional economic burden is about $5,000 to $7,000 for each infection (Wenzel, 2008). Since the very inception of hospitals, NIs have existed and are a persistent and noticeable health problem that occur in all countries. Even today they continue to be a hazard (Kouchak, 2012; Bereket, 2012). These days, the increased use of antimicrobial agents and advanced lifesaving medical practices expose the patients to invasive procedures, rendering to an increased threat of NIs (Bereket, 2012).

In today's compensation scenario, where hospitals are increasingly reimbursed for their performance, it is clear that the NI-related business-case discussions must take place around potential long-term savings from cost-avoidance which hospitals can make by decreasing avoidable adverse events that cause NIs. This will be beneficial to all: the healthcare organizations, the patients and their families and the economy of a country as a whole (Reis, 2009).Health is a crucial aspect for each society. A noticeable infection that plays a significant role in influencing the wellbeing of the society is NI. This infection has appalling negative effects such as deaths and financial burdens. As stated above, NI has an extensive reach throughout the world, and hence determining a solution to stop and control it is crucial for healthcare facilities.

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