



The Most Important Species of Nosocomial Infection and the Most Important Wards Susceptible to Nosocomial Infection

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Dear Editor-in-Chief

In a study conducted by WHO in 55 hospitals situated in 14 countries of the four regions of Europe, East Mediterranean, Southeast Asia, and Western Pacific, it was found that, on the average, 8.7% of hospitalized patients were afflicted with hospital-acquired infections. This study also revealed that more than 4.1 million people in the world suffer from hospital infections (1). The rate among ICU patients is 28%, compared with a 12% for overall hospital admissions (2). A study in Italy confirms this view and argues that overall, 6,352 patients were surveyed. The prevalence of NI was 7.6% (range 2.6%–17.7%), while 6.9% of patients (range 2.6%–15.5%) were affected by at least one NI. The prevalence of patients with NI in medical, surgical and intensive care areas was 6.6%, 5.0% and 25.8%, respectively. The sites most frequently affected were urinary tract (28.4%), surgical site (20.3%), blood stream (19.3%), pulmonary and lower respiratory tract (17.6%) (3). Many studies have proven this entry. We conducted an analytic cross-sectional study. The research environment included the selected hospitals A, B, and C in the Qazvin Province, central Iran. The research population was 25628 patients hospitalized in the first eight months of 2012 in these three hospitals. Overall, 242 cases of

hospital infections were recorded at the three hospitals. The highest percentage of hospital infections takes place at the ICUs. At hospital A, the ICU ward ranked first with 13.7% (50 of the 363 hospitalized during the eight months had hospital infections) At hospital C, as in hospital A, the ICU wards ranked first with the average percentage of 12.5% (14 of the 112 hospitalized patients had hospital infections) and the same trend was found in hospital B. The NICU with 20% (19 of the 94 hospitalized patients had hospital infections). In each of the three hospitals surgery ICU ward and PICU ward came in second. The common types of hospital infections observed at the three hospitals were as follows. At hospital A, pneumonia with 40% ranked as the most common hospital infection and skin- and soft tissue- infections with 11% came in second. Symptomatic urinary tract infections with 8.9%, deep surgical site infections (ssi-st) with 8%, eye, ear, nose, throat, upper respiratory system (eentur) with 6.2%, the superficial surgical site infections (ssi-skin) with 4.4%, and other causes of infections with 1-2 cases during the eight months ranked second to last, respectively. At hospital C, symptomatic urinary tract infections (uti-suti) with 59% of the total cases were

the most common hospital infection, while pneumonia with 30% and bsi-lcibi (that is, lab certified blood infections) with 10% ranked second and third, respectively. During these eight months, 346 patients died in three hospitals, 51 of whom had developed nosocomial infection.

At hospital B, pneumonia with 21.6%, bsi-lcibi with 21%, lower respiratory system infections (lri-lung) with 16.2%, clinical space blood infections (bsi-csep) with 16%, and infections caused by other agents with 1-2 cases during the eight months ranked first to last as the most common hospital infections, respectively. In United States, more than 40% of annual hospital infections were urinary infections most caused by using urinary catheters (4).

The chi-square test was employed to study the relationship between the hospitalization periods and the wards where the patients were hospitalized. Since the conditions for conducting this test were not satisfied, the method of combining columns and rows was used. Based on this test, there was a statistically significant relationship between hospitalization periods and the wards in which the patients were hospitalized ($P < 0.05$).

Because the three hospitals in our study were old, also there was lack of suitable architectural designs, only personnel education cannot bring down the rates of hospital infections to the long-term plans levels.

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References

1. Tikhomirov E (1987). WHO Programme for the Control of Hospital Infections. *Chemioterapia*, 3:148–151.
2. Benady S (2000). Nosocomial infections high in ICU. *Medical Post*, 36(28):54.
3. Pellizzer G, Mantoan P, Timillero L, Allegranzi B, Fedeli U, Schievano E, et al. (2008). Prevalence and Risk Factors for Nosocomial Infections in Hospitals of the Veneto Region. *North-Eastern Italy Infection*, 36(2):112-9.
4. Mandell GL, Bennett GE, Dolin R (2010). *Principles and Practice of Infectious diseases*. 7th Ed. USA. Elsevier Press, pp.:3669-717.