

The occurrence of Healthcare-associated infections in Geriatric Patients in an University Hospital in Slovakia in years 2012 – 2014

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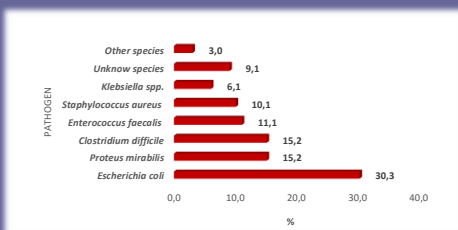
BACKGROUND:

The elderly population is increasing worldwide. Healthcare-associated infections (HCAIs) have become an important public health issue and pose a threat to geriatric population. The geriatric patients have impaired host defenses that compromise their ability to ward off infectious agents. Presence of multiple medical problems, nutritional deficiency, functional impairments (immobility, incontinence, dysphagia), use of urinary catheters, invasive devices, antibiotics and regression of immunity contribute to the susceptibility of older people to develop HCAIs¹. Nosocomial infections have emerged as an important cause of morbidity and mortality in elderly patients leading to prolonged hospital stay, treatment failure and increased cost of healthcare².

METHODS:

A retrospective study was conducted in the period of January 2012 to December 2014, in an University Hospital in Slovakia. Clinical and demographic informations of each patient hospitalized at the Geriatric Department with HCAIs, were obtained from medical records. Inclusion criteria to the study was confirmation of HCAIs (hospitalization for >7 days, presence of invasive devices, positive microbiology for clinical isolates and their antimicrobial profile. Identification of clinical isolates and antimicrobial profile were performed by standard microbiological methods. Statistical analysis was performed both in open source statistical package. “R” and P value <0.05 was considered statistical significant.

Graph 1: The most frequent isolated HCAIs microorganisms at the Geriatric Department in 2012-2014.



Graph 2: The distribution of HCAIs reported by location.

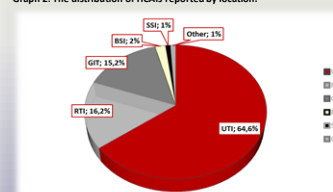


Table 1: The number of reported HCAIs at the Department of Geriatrics in the years 2012 – 2014.

Year	Nr. Of HCAIs	Nr. of CH	Proportion of HCAIs / 100 CH
2012	25	1591	1,57
2013	29	1684	1,72
2014	45	1717	2,62
All	99	4992	1,98

CH= the number of completed hospitalization

Graph 3: Trend an increased tendency report of HCAIs in Slovakia in the years 2012-2014.



RESULTS:

Out of a total 4492 hospitalized patients in 2012 – 2014 at the Geriatric Department, 99 (2.2%) developed HCAIs. Proportion of HCAIs at the number of completed hospitalization was higher in year 2014 as in year 2012. Increased tendency to report HCAIs is seen in Table 1. The prevalence of HCAIs was higher in females (67 %) than in males (33%). Median age of patients was 83 years. Urinary tract infections (64.6 %) were the most common infections followed by respiratory tract infections (16.2%), gastrointestinal tract infections (15.2%) and bloodstream infections (2%) (Graph 2). The most frequent isolated microorganisms were *Escherichia coli* (30.3%), *Proteus mirabilis* (15.2%), *Clostridium difficile* (15.2%), *Enterococcus faecium* (11.1%), *Staphylococcus aureus* (10.1%) and *Klebsiella spp.* (6.1 %) (Graph 1). The risk factors as a permanent urinary catheter, immobility, urinary and faecal incontinence and the presence of bed sores have had significant influence on the occurrence of HCAIs of geriatric patients (P<0,05).

CONCLUSIONS: The results of our study suggest an increased tendency to report of HCAIs in Slovakia in the years 2012-2014, although the real prevalence remain underestimated in our country. Multifactorial efforts as an early recognition of infections, restricted use of invasive devices and effective infection control measures can contribute to reduction of HCAIs in geriatric patients. Infection control practitioners and hospital epidemiologists are well advised to follow and study the aging population in the evolving Health-care system. Undoubtedly, they will find new opportunities to prevent health care-associated infections. In addition, they may be able to develop strategies to prevent the diverse contagions of the elderly from entering hospitals.