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The occurrence of healthcare-associated infections in geriatric patients in a university hospital in Slovakia, 2012 - 2014

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Background: Worldwide, the elderly population is increasing, and therefore the evaluation and treatment of the elderly has become very important. Healthcare-associated infections (HCAIs) have become an important public health issue and pose a threat to geriatric population. HCAIs have emerged as an important cause of morbidity and mortality in elderly patients, leading to prolonged hospital stay, treatment failure and increased cost of healthcare.

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

Results: Out of a total 4492 hospitalized patients in 2012 - 2014 at the Geriatric Department, 99 (2.2 %) developed HCAIs. Prevalence of HCAIs was more in females (67 %) than in males (33 %). Median

age of 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 blood stream infections (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* (11.1 %) and *Klebsiella* spp. (6.1 %). The risk factors as a permanent urinary catheter, immobility, urinary and faecal incontinence and the presence of decubitus have significant influence on the occurrence of nosocomial infections of geriatric patient.

Conclusions: These results suggest an increased tendency to reports of HCAs in Slovakia in the years 2012-2014, although the real prevalence remain underestimate in our country. Hence multifactorial efforts as an early recognition of infections, restricted use of invasive devices and effective infection control measures, can contribute towards significant to reduce of HCAs in geriatric patients.