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Antibiotic prescribing in long-term care facilities in Slovenia, a point prevalence study

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Background: Antibiotics are frequently prescribed to patients in long-term care facilities (LTCF). In light of the emerging problem with multidrug resistance, this may pose direct risk to residents in LTCF. The aim of this paper is to investigate the prevalence and practice of antimicrobial prescribing in LTCF in Slovenia, and hence identify targets for quality improvement.

Material/methods: The point prevalence study was conducted between April and June 2016. We invited 117 Slovenian LTCF, counting 20224 residents, to take part in our study. Data were collected on one single day with two on-line questionnaires: one on LTCF characteristics and second on currently prescribed systemic antibiotic treatments.

Results: Eighty out of 117 Slovenian LTCF (68.3 %) responded to our invitation. 317 residents out of 13022 (2.4%, median: 1.9%, min-max: 0-7.6%) received antibiotics on the day the survey was conducted. Further analysis was performed on 255 patients who signed informed consent. The mean age of the residents with an antimicrobial treatment was 83.4 years (median: 85 years, min-max: 46-

100 years) and 70% were women. The most common were respiratory tract infections (RTI) (42.7%), followed by urinary tract infections (UTI) (33.3%) and skin and skin structure infections (19.6% of residents). Seven residents (2.8%) received two antibiotic agents simultaneously. Co-amoxiclav was the most often prescribed antibiotic followed by fluoroquinolones, ciprofloxacin being the commonest. 208 (84%) antibiotic treatments were prescribed by general practitioners that work in the LTCF, in 17 cases (6.9%) the treatment was started in hospital, in 11 cases (5.3%) the antibiotics were prescribed in specialists' clinics, only 4 antibiotic therapies (1.6%) were prescribed by a doctor on duty. The commonest diagnostic tests used in RTI were c-reactive protein (36.6%) and blood cell count (33.3% of RTI), the urine dipstick test was performed in 48.5% of UTI cases, whereas in cases of skin infections most frequently (42.4%) there were no diagnostic tests done. Microbiological testing was performed in 5.2% of the cases. We have shown a statistically significant correlation between the age of 80 and above and antibiotic treatment ($p=0.0425$, χ^2 test, OR=1.33). Advanced dementia was not significantly correlated with antibiotic prescribing ($p=0.406$, χ^2 test, OR=1.12). The usage of wheelchair was also not significantly correlated with antibiotic prescribing ($p=0.286$, χ^2 test, OR=1.16). There was a statistically significant correlation between immobility and antibiotic treatment ($p<0.01$, χ^2 test, OR=1.62).

Conclusions: This is the first nation-wide study to investigate antimicrobial prescribing in LTCF in Slovenia. The prevalence of antimicrobial treatment is low, however frequent prescription of co-amoxiclav and fluoroquinolones may lead to an increase of multidrug resistant organisms. The use of diagnostic tests is low, specially microbiological testing. Stewardship interventions to improve antibiotic prescribing in LTCF should be considered.