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Point Prevalence Surveys of antimicrobial consumption over a 10 year period at University Medical Centre Ljubljana, Slovenia

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INTRODUCTION & PURPOSE

Point prevalence surveys (PPS) of AM consumption were conducted over a ten year period at University Medical Centre (UMC) Ljubljana, a tertiary care hospital in Slovenia, as a part of various European projects. In 2006[1], 2008 and 2009 the PPS were a part of multicentric PPS of AM consumption carried out by The European Surveillance of Antimicrobial Consumption (**ESAC**)[2]. In 2011 and 2012 these PPS were a part of multicentric PPS of healthcare-associated infections and AM use in European acute care hospitals conducted by European Centre for Disease Prevention and Disease Control (**ECDC**)[3]. Finally, in 2015 the PPS was a part of **The Global PPS**[4] of AM consumption and resistance designed and carried out by a group of researches at Laboratory of medical microbiology, University Antwerp, Belgium. Since all of these studies were well designed, standardized and thoroughly carried out, we gained a large pool of data on AM consumption at UMC Ljubljana, that can be compared throughout the period of 10 years and trends of AM use can be described.

METHODS

PPS were conducted altogether 7 times from 2006 to 2015 at the University Medical Centre (UMC) Ljubljana. All surveys included inpatients in intensive care units (ICU), adult medical wards (AMW), adult surgical wards (ASW) and Department of infectious diseases (DID) receiving an AM on the day of PPS. From the data collected during the PPS over the ten year period the following data were included in the present study: AM prevalence, AM agents, route of administration, indications, duration of surgical prophylaxis, diagnoses and compliance to guidelines. Denominators included the total number of inpatients. Trends of the above mentioned data over the ten year period were described.

RESULTS

The AM prevalence for the ICU, AMW, ASW and DID in general is shown in Table 1.

Table 1: *AM prevalence for the ICU, AMW, ASW and DID.*

	ICU	AMW	ASW	DID
AM prevalence	52-83%	30-34%	21-37%	72-80%
Department with the highest AM prevalence	Surgical ICU 75-100%	Department of haematology 53-69%	Department of plastic surgery and burns 27-73%	/
Department with the lowest AM prevalence	Neonatal ICU 10-27%	Department of endocrinology 7-55%	Department of neurosurgery 11-31%	/

Regarding the **trends of AM prevalence** over the 10 year period only a slight decrease in the ICUs (from 62% in 2006 to 52% in 2015) and at AMW (from 34% in 2006 to 30% in 2015) was observed. Over the ten year period in general no trends in the AM prevalence at ASW and at DID can be observed.

For the period of 10 years and together for ICUs, AMW, ASW and DID **the top 3 groups of AM at ATC3 level** prescribed were penicillins with other beta-lactams (J01C, J01D respectively, each group 24%), followed by the group of other antibacterials (J01X, 22%) and quinolones (J01M, 15%).

Regarding **the 10 year trends of AM at ATC3 level** an overall increase of penicillins (J01C), a decrease of other beta-lactams (J01D) and a decrease of other antibacterials (J01X) prescribed are observed. There are no trends for other AM, including quinolones (J01M), observed. Trends of J01C, J01D, J01X, J01M prescribed at ICUs, AMW, ASW and DID together for the 10 year period are shown at Chart 1.

The 10 year trends of **surgical prophylaxis** at ASW show a decrease in prophylaxis prescribed for > 1 day (from 84% in 2006 to 59% in 2015) and an increase in prophylaxis prescribed as a single dose (from 6% in 2006 to 31% in 2015) (Chart 2).

Chart 1: *The percentage of AM at ATC3 level prescribed for the 10 year period.*

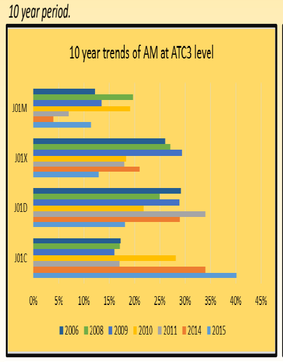
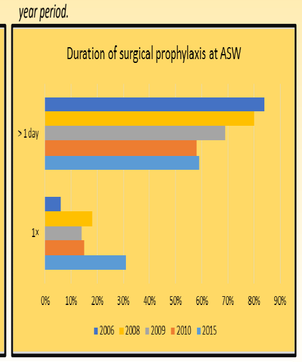


Chart 2: *The duration of surgical prophylaxis at ASW for the 10 year period.*



CONCLUSIONS & DISCUSSION

PPS conducted from 2006 to 2015 provided an insight into antimicrobial prescribing at UMC Ljubljana during this period. In general results of PPS show no trends or only a slight decrease in AM prevalence at UMC Ljubljana. The use of penicillins increased and the use of other beta-lactams and other antibacterials decreased. There was a decrease in surgical prophylaxis prescribed for > 1 day observed. These results reflect the fact that an antimicrobial stewardship program is present at UMC Ljubljana and that in recent years some interventions took place. More in depth analysis of the gained data is needed to provide the background for additional interventions.

REFERENCES

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