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The Global Point Prevalence Survey of Antimicrobial Consumption and Resistance (Global-PPS): First Results of Antimicrobial Prescribing in Russian Hospitals

Russian Federation

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INTRODUCTION AND PURPOSE

Systemic antimicrobials (AM) belong to one of the most commonly used groups of drugs in hospital settings. It was estimated in previous studies that about 30% of patients in multi-field hospitals received AM agents. They accounted for up to 30-50% of total hospital expenditures for pharmacotherapy. It is well known that AM use and overuse is one of the main factors responsible for the development and spread of antimicrobial resistance among inpatients. Global-PPS, a uniform and standardized method for surveillance of AM use, was applied to assess variations in AM prescribing in Russian multi-field hospitals and identify targets for improvement.

METHODS

PPS was conducted in March-April 2015 in 3 pediatric hospitals (Novokuznetsk, Petrozavodsk, Stavropol), 3 secondary hospitals (Smolensk, Yakutsk, Perm) and 1 tertiary hospital (Moscow) – Figure 1. The survey included all inpatients receiving an AM on the day of PPS. Age, gender, weight, AM agents, doses, reasons and indications for treatment, microbiological data, compliance to guidelines, documentation of reasons and stop/review date of prescription were collected. Denominators included the total number of inpatients. A web-based application designed by the University of Antwerp (www.global-pps.com) was used for data-entry, validation and reporting.

RESULTS

The main results of the survey are presented in Table and Figures 2-4.

Figure 1. Geographical location of participated hospitals

Table. AM use in Russian hospitals	Smolensk	Yakutsk	Perm	Novokuznetsk	Stavropol	Petrozavodsk	Moscow
N of patients admitted/ N of wards surveyed	1079/31	515/16	482/11	338/10	353/11	357/11	288/13
Community-acquired vs nosocomial infections, %	83.5/16.5	89/11	83/17	57/43	58/42	73.5/26.5	7/93
Therapeutic vs prophylactic use of AM, %	59/41	55/45	60/40	51/49	77/23	87.5/12.5	56/44
Medical vs surgical prophylaxis, %	2/98	67/33	0/100	13/87	81/19	100/0	0/100
Duration of surgical prophylaxis	>1 day - 100%	1 day - 2% >1 day - 98%	1 day - 3% >1 day - 97%	1 day - 75% >1 day - 25%	1 dose - 100%	-	>1 day - 100%
Empirical vs targeted AM therapy, %	98/2	88/12	99/1	90/10	93/7	91/9	79/21
Guidelines noncompliance, %	45	2	5	8.5	0	5	0
Treatment based on biomarkers data, %	0	0.3	19.6	29.2	70.7	34	15
Documented stop/ review AM use date, %	14	0	4.4	9.7	20.7	51.8	82.9

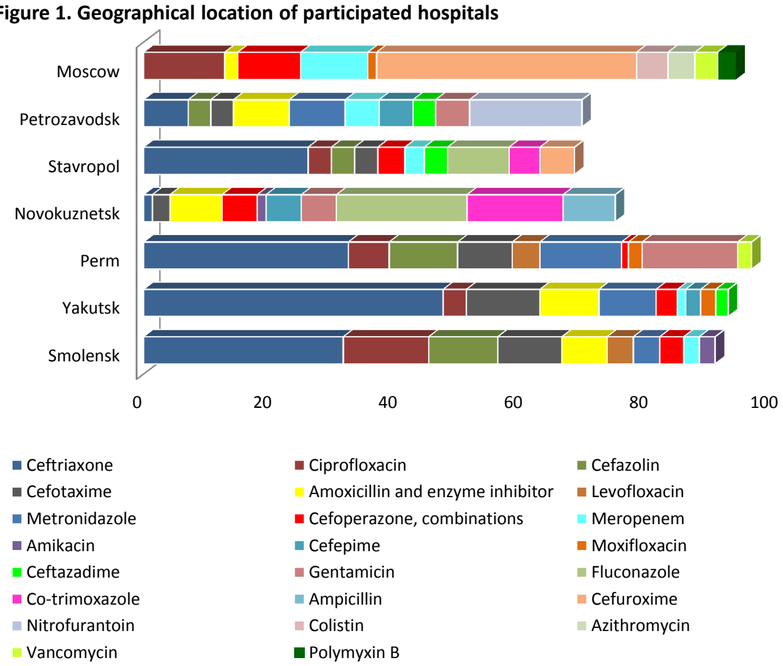

Figure 4. Top 10 AM used share (%) in the total consumtion

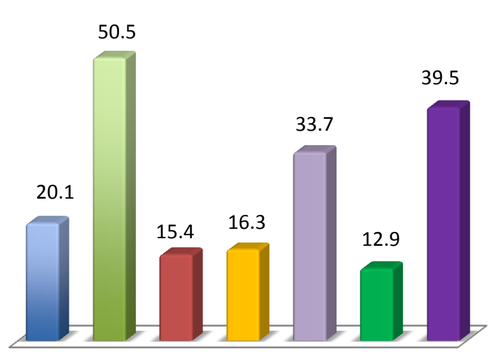

Figure 2. AM prevalence rate in *Russian* hospitals, %

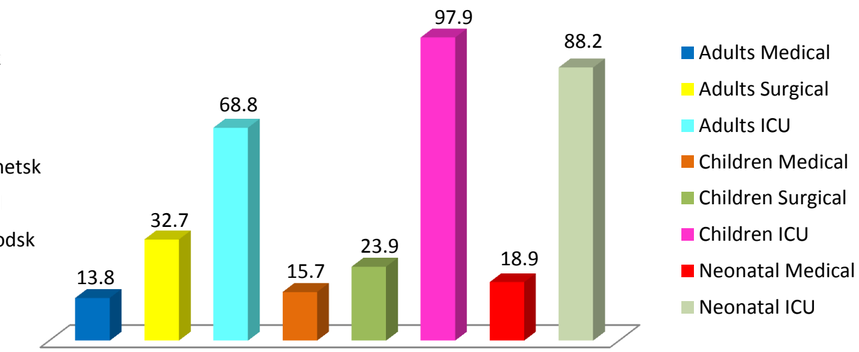

Figure 3. Antimicrobial prevalence rates (%) by type of unit

CONCLUSION

AM use rates as well as prescription patterns varied considerably among the hospitals partially due to different patients' profile. Therapeutic use prevailed at all sites with community-acquired infections being more common indication for AMs in all but one hospital. Extended duration of surgical prophylaxis and low adherence to local guidelines in Smolensk require additional education programs. Predominance of empirical therapy in Moscow, Novokuznetsk and Stavropol needs more detailed evaluation taking into account the high rate of nosocomial infections as an indication for AM use.

Disclosures: "**bioMérieux** sponsored the GLOBAL Point Prevalence Survey. The funder has no role in study design, data collection, data analysis, data interpretation, or writing the report. Data are strictly confidential and stored anonymous at the coordinating centre of the University of Antwerp."