

Session: P053 Hospital antibiotic prescription measurements and surveys

Category: 5d. Pharmacoepidemiology, improved prescribing and antibiotic stewardship

24 April 2017, 12:30 - 13:30
P1166

Recent patterns of antibiotic use in 150 acute care hospitals in Germany - no correlation of drug use density with hospital size

Katja De With^{*1}, Anna Christoph², Gesche Foerst³, Michaela Steib-Bauert⁴, Matthias Fellhauer⁵, Winfried V. Kern⁶

¹*University Hospital C. G. Carus Dresden; Division of Infectious Diseases*

²*Division of Infectious Diseases; University Hospital C. G. Carus Dresden*

³*University Medical Center Freiburg; Pharmacy / Division of Infectious Diseases*

⁴*University Medical Center Freiburg; Division of Infectious Diseases*

⁵*Schwarzwald-Baar Klinikum; Pharmacy*

⁶*University Hospital; Center for Infectious Diseases & Travel Medicine*

Background: Continuous hospital-wide antibiotic use surveillance has recently been established in Germany. Participating hospitals contribute on a voluntary basis (see also: www.antiinfektiva-surveillance.de), and feedback reports for benchmarking stratified according to hospital size (<400 beds, 400-80 beds, >800 beds) are provided every year. The aim of the present study was i) to describe the level of antibiotic use in pediatric and psychiatric services compared with core service use, ii) to describe patterns and estimate proportions of intensive care unit and normal ward drug use per total use, and iii) to reassess the impact of hospital size on drug use density.

Material/methods: Electronically delivered quarterly consumption data are transformed into “recommended” (hospital-adapted) daily doses (RDD) (www.antiinfektiva-surveillance.de) and expressed as RDD per 100 patient days (RDD/100). WHO-DDD (version 2016) were also calculated. We here describe the most recent analysis for acute care hospitals (n=150) that delivered complete data for at least four consecutive quarters in 2014/15.

Results: The 2014/15 sample included 135 non-university hospitals (with a median number of 331 beds [IQR, 201 to 513]) and 15 university hospitals. Using pooled data, psychiatric services (n=44, use density 2.8 RDD/100) and pediatric services (n=65, use density 25.5 RDD/100) contributed 0.7% and 3.6%, respectively, of the total RDD reported. Median yearly antibiotic use density in the core services (psychiatry and pediatrics excluded) was 40.4 RDD/100 (IQR 34.1 to 45.9) with a significant difference between university and non-university hospitals in overall use (55.3 versus 39.8 RDD/100, p<0.01; or 73.8 versus 53.6 WHO-DDD). Although antibiotic use density in intensive care was twice as high as on normal wards, intensive care contributed no more than 12.2% (pooled data, median 10.8%, IQR 8.6% to 13.7%) versus 17.8% (pooled data, median 16.9%, IQR 15.4% to 21.0%) of the total core service RDD reported in university and non-university hospitals, respectively. For non-university hospitals, there was no correlation between overall use density with hospital size (Figure).

Conclusions: The current analysis demonstrated university hospital as a major factor for overall use density while among non-university hospitals there was no measurable impact of hospital size on use density. The contribution to overall use was <5% for pediatrics (needing separate evaluation) and <1% for psychiatry, and the contribution of ICU antibiotic use within the core services was <20%.

Figure: Antibiotic use density (RDD/100) relative to hospital size.

