Prescription rates of antibiotics in outpatient treatment of selected infectious diseases in Germany

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Introduction: The increasing multi-drug resistance of pathogens as result of a disproportionate application of antibiotics in veterinary and human medicine is a growing problem. To approach this issue it is necessary to obtain a more detailed picture of how antibiotics are used today. Here, we present an overview of the prescription rates of antibiotics in outpatient treatment of selected infectious diseases. The findings are to support physicians in outpatient care in indication-related prescriptions and thus to contribute to an improvement of the antibiotics resistance situation.

Methods: As basis for our analysis we used the nationwide outpatient claims data of panel doctor services (under terms of §295 SGB V) and nationwide outpatient drug prescription data (under terms of §300 para. 2 SGB V), both from 2009. We compiled a dataset of prescription rates for infectious diseases which are frequently treated within the outpatient medical care, i.e. infections of the upper and lower respiratory tracts, pharyngitis/tonsillitis, scarlet fever, pneumonia, otitis media and uncomplicated urinary tract infections. Inclusion criteria for valid cases were the existence of one of these diagnoses and besides of no further infectious disease and no pregnancy during a quarter. First prescriptions of antibiotics during the same quarter were matched per patient. Total antibiotics prescription rates as well as prescription rates of different substance groups were derived for each investigated disease. The results were compared to guidelines developed by the European Surveillance of Antimicrobial Consumption project (ESAC). Particular attention was paid to the total prescription rates and to those of chinolones. Additionally, a regional comparison was carried out for the federal states of Germany.

Results: For some of the diseases the antibiotics prescription rates were higher, for some they were lower than the recommended by the guidelines of the ESAC: infections of the upper and lower respiratory tracts (30.6% / recommended: 0-30%), pharyngitis/tonsillitis (59.5% / 0-20%), scarlet fever (81.5% / no quantification) , pneumonia (53.7% / 90-100%), otitis media (36.5% / 0-20%), uncomplicated urinary tract infections (57.5% / 80-100%). Furthermore, lower prescription rates were observed for East Germany (i.e. the former GDR) than for West Germany, excepting only scarlet fever. The maximum difference was 10 percentage points and was related to otitis media and urinary tract infections. Chinolones were prescribed more often in East Germany. The highest rates of chinolone prescription were revealed for pneumonia (25.9%) and urinary tract infections (45.0%). For all investigated diseases a portion of Chinolones of maximum 5% of all prescribed antibiotics was recommended. Only for pharyngitis/tonsillitis and scarlet fever this limit was not exceeded.

Discussion: Depending on the disease there were antibiotics prescription rates in accordance with the guidelines, but also beyond those, with some clear regional variation. Considering the development of the antibiotics resistance situation, particularly the use of chinolones should be monitored and ideally be reduced.

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