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Hospital statistics for antibiotics: defined versus prescribed daily dose

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PURPOSE

Defined daily doses (DDD) are widely used as a unit to measure drug use in hospital and community settings. However, discrepancies exist between DDD and actual prescribed daily dose (PDD). The present study aims at estimating an alternative PDD (PDD-proxy) to calculate rates of systemic antibiotic consumption and to compare these results with those obtained using DDD.

METHODS

The study considered a 9-year period (2004-2012) and included the 17 Health Trusts (HTs) in the Emilia-Romagna Region, Italy. Drugs under study were antibacterials for systemic use (group J01). Data were obtained from the database for hospital drug prescription of Emilia-Romagna Region. The PDD-proxy was estimated by averaging the doses of antibiotic prescriptions from a point prevalence survey for healthcare-associated infections and antimicrobial use, conducted in Emilia-Romagna hospitals in 2012.

RESULTS

Significant discrepancies between DDD and PDD were observed, especially for some antibiotics, resulting in DDD rates that were systematically higher than PDD-proxy rates. In 2012, HT median rates of antibiotic consumption were 90 DDD/100 bed days and 70 PDD-proxy/100 bed-days. However, PDD-proxy and DDD rates showed comparable trends within HTs, although some HTs ranked differently when one or the other measure was used. Interquartile ranges of DDD rates were systematically wider than those of PDD-proxy rates in most years in the period of interest.

CONCLUSIONS

Comparison of HT antibiotic consumption using DDDs may artificially increase observed differences and affect the true HT ranking. Therefore, an additional unit of measurement is useful for in-depth analysis at the local level.