



Global survey of polymyxin use: A call for international guidelines

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ABSTRACT

Polymyxins (polymyxin B and colistin) are older bactericidal antibiotics that are increasingly used to treat infections caused by multidrug-resistant (MDR) Gram-negative bacteria. However, dosing and clinical use of these drugs vary widely. This survey was undertaken to reveal how polymyxins are used worldwide. Data were collected through a structured online questionnaire consisting of 24 questions regarding colistin usage patterns and indications as well as colistin dosage for adult patients. The questionnaire was disseminated in 2011 to relevant experts worldwide and was completed by 284 respondents from 56 different countries. Respondents from 11/56 countries (20%) had no access to colistin; 58/284 respondents (20.4%) reported that in 2010 they experienced that colistin was not available when needed. Formulations of polymyxins used were reported as: colistimethate sodium (48.6%); colistin sulfate (14.1%); both (1.4%); polymyxin B (1.4%); and unknown. Intravenous formulations were used by 84.2%, aerosolised or nebulised colistin by 44.4% and oral colistin for selective gut decontamination by 12.7%. Common indications for intravenous colistin were ventilator-associated pneumonia, sepsis and catheter-related infections with MDR Gram-negative bacteria. Only 21.2% of respondents used a colistin-loading dose, mainly in Europe and North America. This survey reveals that the majority of respondents use colistin and a few use polymyxin B. The survey results show that colistin is commonly underdosed. Clear guidance is needed on indications, dosing and antibiotic combinations to improve clinical outcomes and delay the emergence of resistance. Colistin should be considered a last-resort drug and its use should be controlled. International guidelines are urgently needed.

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