Chloramphenicol: Is Old Really Gold?

Sir,

The scaring emergence of extremely-drug resistant Gram-negative bacteria has necessitated a re-look on old antimicrobials, since there are hardly any new molecules being developed. Polymyxin B and colistin (Polymyxin E) is already being tried clinically in a select population as a life-saving antimicrobial. We evaluated the susceptibility of chloramphenicol against multi-drug-resistant Gram-negative bacteria (defined as resistant to at least two different classes of antimicrobials) at our hospital, which is a level-I trauma care centre of AIIMS hospital, India. A total of 1037 consecutive, MDR Gram-negative bacterial isolates obtained from clinical samples of trauma patients admitted to the ICUs were screened for chloramphenicol susceptibility by the disc diffusion method as per the CLSI guidelines. Of these, 368 (35%) were from respiratory samples, 214 (20%) from urine, 181 (17%) from blood, 160 (15%) from sterile fluids, 89 (8%) from pus and 25 (2%) from tips. Of the 1037 isolates, 292 (28%) were Acinetobacter baumannii, 287 (27%) were Pseudomonas aeruginosa, 199 (19%) were Klebsiella pneumoniae, 106 (10%) were E. coli, 73 (7%) were Enterobacter cloacae, 29 (3%) were Proteus mirabilis, 19 (2%) were Stenotrophomonas maltophilia, 17 (1%) were Burkholderia cepacia, 8 (0.7%) were Morganella morgannii, 4 (0.4%) were Citrobacter diversus, two (0.2%) were Providencia rettgeri and one was Salmonella Typhi. For chloramphenicol, isolates with a zone diameter ≤ 12 mm were considered to be resistant, those having a zone diameter of 13–17 mm were intermediate, and those with a zone diameter of ≥ 18 mm were sensitive. Only 155 of the 1037 isolates (15%) were sensitive to chloramphenicol. Thus, 20 (7%) isolates of A. baumannii, 24 (8%) of P. aeruginosa, 54 (27%) K. pneumoniae, 34 (32%) E. coli, 17 (23%) E. cloacae, 4 (14%) Proteus Spp and one each of S. maltophilia and B. cepacia were chloramphenicol susceptible.

The emergence of multidrug-resistant microorganisms has led some clinicians to reconsider the use of chloramphenicol. Several recent studies have documented a 90–95% re-emergence of chloramphenicol susceptibility among Salmonella enterica serotype typhi isolates in North India. Chloramphenicol is still being used as first line treatment of acute bacterial meningitis and acute severe pneumonia in developing countries. A recent multicenter randomized control trial (SPEAR study), conducted in children aged 2-59 months with severe pneumonia within tertiary care hospitals in Bangladesh, Ecuador, India, Mexico, Pakistan, Yemen, and Zambia, advocated injectable ampicillin plus gentamicin instead of injectable chloramphenicol in low resource settings. Over the past decade, resistance to chloramphenicol among meningitis pathogens has become a major problem in many developing countries. In a recent study, using ceftriaxone as the first line treatment of acute bacterial meningitis and changing to chloramphenicol in cases of in vitro susceptibility was effective in reducing adverse outcomes from bacterial meningitis, compared to using chloramphenicol as first line treatment and later changing to ceftriaxone if the bacteria isolated were proven to be resistant.

In a recent study by Anguzu et al, no Gram-negative bacterial isolates from septic post-operative wounds were sensitive to chloramphenicol. Therefore, in our view, more studies are required before recommending this antimicrobial for treatment of severe infections due to MDR Gram-negative isolates in view of its potential toxicity and limited in-vitro activity. Clinicians should await antimicrobial susceptibility results before initiating treatment with Chloramphenicol.

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**References**


