Antimicrobial resistance of Gram-negative bacilli from an intensive care unit in Trinidad, West Indies

To the Editor

We read the article by Orret,[1] with interest and we would like to make a few comments. The 5-year surveillance of antimicrobial susceptibility of various Gram-negative bacilli isolated from patients in the intensive care unit (ICU) in the General Hospital, San Fernando in Trinidad and Tobago, West Indies, incorporated an audit of the antimicrobials consumed by ICU patients.[1] Certainly the recommended empiric choice in ICU patients of imipenem, ciprofloxacin and piperacillin-tazobactam while awaiting culture reports would assist in better management of bacterial infection, it would be essential to scrutinize both the quality and bioavailability of antimicrobials offered to ICU and non-ICU hospitalized patients.

The efficacy of intramuscular benzathine penicillin G and oral penicillin V in eradication of *streptococci* from children with acute pharyngitis, has been known for a while. Recently, there was a warning from Minneapolis, Minnesota, United States of America, when the recommended penicillin dose in group A *streptococci* infection were accompanied by 35-37% microbiological failures, a carrier state and inadequate bioavailability of intramuscularly given benzathine penicillin G were incriminated, for poor therapeutic response.[2]

Different brands of orally administered antibiotics could vary remarkably in their in-vivo bioavailability. Dissolution efficiencies of different brands of ciprofloxacin film coated tablets were monitored in acetic acid and phosphate buffer pH [7.4.] Five of the 6 bands with a 60-70% fall in 30 minutes were considered to be adequately bioavailable in-vivo. Six brands had less than 40% fall in ciprofloxacin content and were regarded to be less bioavailable.[3]

Last but not least, monitoring of the quality control of available antimicrobial products would address the ground realities associated with therapeutic agents offered to the public in Trinidad and Tobago, West Indies. Recently, potency of antibiotics offered by 5 of the 41 drug sellers and 5 of the 40 general practitioners who were selling antibiotics in the city of Myitkyina, Myanmar, Burma, was evaluated.[4] Potency of benzathine benzyl penicillin, benzyl penicillin, ceftriaxone, chlortetracycline, ciprofloxacin, clotrimazole, co-trimoxazole, doxycycline, and anderythromycin remained in the 10% range of the expected value. Three drugs were expired and the expiration date was not available for 6 others. One product did not contain the active drug declared (chlortetracycline; Lombisin, Unicorn, China) and did not show any in vitro activity against bacteria. Seven of 21 products (33%) did not contain the stated dosage. The highest deficit observed was 48% in 2 products, namely co-trimoxazole (Yong Fong, Myanmar) and benzyl penicillin, (China).

Incorporation of antibiotic potency and bioavailability assays into future hospital policies governing antimicrobial usage or educational programs for rational prescribing[1] would eliminate any therapeutic failures associated with poor quality antimicrobials. That would also address any reduced antimicrobial bioavailability in serious and moribund patients in hospital ICUs.

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