Inter-Method Susceptibility Comparisons Produced by Several National Methods: Report of Garenoxacin Results Produced by Methods from France, Germany, Spain, Sweden and United Kingdom versus NCCLS


Background: Lack of mandatory antimicrobial susceptibility testing criteria among national testing standards may lead to variation in interlaboratory susceptibility test methods and results among the most utilized methods. Investigators: Methods: Investigators in France (F), Germany (G), Spain (Sp), Sweden (Sw) and United Kingdom (UK) tested 2 bacterial sets (330 strains in each set) for 3 antimicrobials (ciprofloxacin (CIP), ceftriaxone (CFT), and vancomycin (VAN)). Each strain was analyzed for variation from the NCCLS results (±2 log2 dilution steps). Results: Overall categorical agreement between the NCCLS and national methods (F, G, Sp, Sw, UK) was >95% for CIP, VAN, and CFT. Concordance rates of >90% were obtained at every log2 dilution step. Also, minimal discrepancies were observed for vancomycin with the national and NCCLS investigation. Repeated values (triplicate) became the result utilized in the study record. Each result by the national and NCCLS method for each organism was included in the analysis. Conclusions: Overall inter-method susceptibility testing results from the five national methods (BSAC, DIN, MENSURA, SFM and SRGA) compare favorably with the MICs generated by the NCCLS broth microdilution method. Correlation coefficients averaged well over 0.90, excellent categorical agreement with the NCCLS results was achieved, and overall inter-method discord rates when five national method results for garenoxacin by susceptibility category were compared were ≤2%.

MATeRiALS AND MeTHODS

Introduction: Interlaboratory variance in antimicrobial susceptibility test methods among national standards may lead to discrepancies in susceptibility test results. These international variations may affect local and national surveillance for emerging antimicrobial resistances. The European Antimicrobial Surveillance System (EARSS) was organized to develop common methods, quality assurance and interpretive standards. However, the evolving problems of inter-method discordances in susceptibility testing have been addressed by the comprehensive studies summarized by Ericcsson and Sherris in 1971. In that 90 page document, excellent categorical agreement with the NCCLS results was achieved, and overall inter-method discord rates when five national method results for garenoxacin by susceptibility category were compared were ≤2%.

Conclusions: The results using the five national antimicrobial susceptibility testing methods to MIC and disk-diffusion tests yielded comparable result. If the interpretive criteria were identical for the MIC breakpoints and when MIC zone diameters to susceptibility and resistance were adjusted for medium and source differences. Overall inter-method susceptibility testing results from the five national methods (BSAC, DIN, MENSURA, SFM and SRGA) compare favorably with the MICs generated by the NCCLS broth microdilution method. Correlation coefficients averaged well over 0.90, excellent categorical agreement with the NCCLS results was achieved, and overall inter-method discord rates when five national method results for garenoxacin by susceptibility category were compared were ≤2%.

Garenoxacin clinical trial susceptibility testing results from these assessed national systems appear to be closely related and compatible for the merging of data in preparation for new drug registrations in the US (FDA) and in the EU.

SELECTED REFERENCES


