

Interpretative Reading of the Antibigram

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The **objectives** of the presentation are to provide the audience with basic concepts on interpretative reading of the antibiogram, its benefits and limitations and current status of development. A few actual examples of this approach will be presented.

Several committees, in addition of providing standards for performing antimicrobial susceptibility tests have developed interpretative criteria for translating susceptibility results into clinical categories (susceptible-intermediate-resistant). Interpretative reading of the antibiogram represents a further step in this process. Its main objectives are to analyse the susceptibility/resistance phenotype of a concrete (well identified) organism, to predict the underlying mechanisms of resistance and to edit clinical categories of antimicrobial agents of clinical, microbiological or epidemiological relevance.

Clinical microbiologists involved in interpretative reading of the antibiogram of clinical relevant microorganisms should know natural/intrinsic patterns of resistance, biochemical and genetic basis of (most) mechanisms of resistance and their clinical relevance, and unusual or currently “impossible” mechanisms of resistance. Unfortunately, there are not many reports available in which all relevant information for interpretative reading has been compiled. The EUCAST has recently settled a subcommittee for developing expert rules for antimicrobial susceptibility testing.

Interpretative reading of the antibiogram may not be an easy task, in particular because of the frequency of multiple mechanisms within the same host and of our limited information about the clinical relevance of some mechanisms (in particular those causing low level resistance).

The main benefits of interpretative reading of the antibiogram include improved reporting on susceptibility testing for therapeutic use of antimicrobial agents, better knowledge about epidemiology of resistance and contribution to quality control in the clinical laboratory.

Selected References for Further Reading

- 1) G. Vedel (2005). Simple method to determine b-lactam resistance phenotypes in *Pseudomonas aeruginosa* using the disc agar diffusion test. *Journal of Antimicrobial Chemotherapy*, 56, 657–664.
- 2) D. M. Livermore, T. G. Winstanley and K. P. Shannon (2001). Interpretative reading: recognizing the unusual and inferring resistance mechanisms from resistance phenotypes. *Journal of Antimicrobial Chemotherapy*, 48(S1), 87-102.

